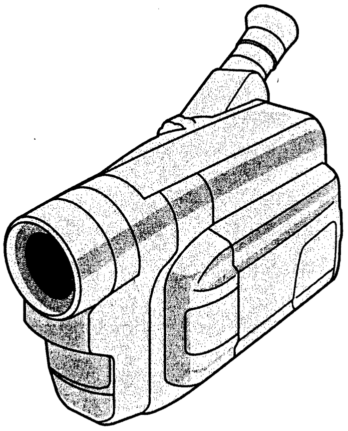
JVC

SERVICE MANUAL

COMPACT VHS CAMCORDER

GR-AXM225U



Compact VHS

VHSC

Regarding service information other than these sections, refer to the GR-AXM220U service manual (No. 86526). Also, be sure to note important safety precautions provided in the service manual.

V25020

SPECIFICATIONS

Camcorder

General

Format : VHS NTSC standard
Power source : DC 6.0 V ⎓
Power consumption
  LCD monitor off, viewfinder on : 4.2 W
  LCD monitor on, viewfinder off : 4.6 W
  LCD monitor on, viewfinder on : 5.2 W
  Video light : 3.0 W
Signal system : NTSC-type
Video recording system
  Luminance : FM recording
  Color : Converted sub-carrier direct recording
Conforms to VHS standard
Cassette : VHSC cassette
Tape speed
  SP : 33.35 mm/sec. (1-5/16 ips)
  EP : 11.12 mm/sec. (7/16 ips)
Recording time (max.)
  SP : 40 minutes
  EP : 120 minutes (with TC-40)
Operating temperature : 0°C to 40°C (32°F to 104°F)
Operating humidity : 35% to 80%
Storage temperature : –20°C to 50°C (–4°F to 122°F)
Weight : Approx. 880 g (2.0 lbs)
Dimensions (W x H x D) : 198 mm x 119 mm x 99 mm (7-13/16" x 4-11/16" x 3-15/16") (with the LCD monitor closed and with the viewfinder fully tilted downward)
Pickup : 1/4" format CCD
Lens : F1.6, f = 3.9 to 62.4 mm, 16:1 power zoom lens with auto iris and macro control, filter diameter 40.5 mm
Viewfinder : Electronic viewfinder with 0.5" black/white CRT
White balance adjustment : Auto/Manual adjustment
LCD monitor : 2.5" diagonally measured, LCD panel/TFT active matrix system
Speaker : Monaural

Connectors

JLIP : ø3.5 mm, 4-pole, mini-head jack (compatible with RC-5325 plug)
  Video : 1 V (p-p), 75 Ω unbalanced, analog output (via Video output connector)
  Audio : 300 mV (rms), 1 kΩ analog output (via Audio output connector)

AC Power Adapter/Charger AA-V16U

Power requirement
  U.S.A. and Canada : AC 120 V∿, 60 Hz
  Other countries : AC 110 V to 240 V∿, 50 Hz/60 Hz
Power consumption : 23 W
Output
  Charge : DC 8.5 V ⎓, 1.3 A
  VTR : DC 6.3 V ⎓, 1.8 A
Charging system : Constant current, peak detection, timer controlled
Dimensions (W x H x D) : 125 mm x 42 mm x 68 mm (4-15/16" x 1-11/16" x 2-11/16")
Weight : Approx. 270 g (0.6 lbs)

Cassette Adapter C-P7U

Dimensions (W x H x D) : 188 mm x 25 mm x 104 mm (7-7/16" x 1" x 4-1/8")
Weight : Approx. 240 g (0.53 lbs)
Accessory : "AA (R6)"-size battery x 1

Optional Accessories

- **Battery Packs BN-V12U, BN-V20U, BN-V856U**
- **Car Battery Charger BH-V3U**
- **Battery Charger BH-VC10U**
- **Audio/Video Cable**
- **Car Battery Cord AP-V7U**
- **Compact VHS (VHSC) Cassettes TC-40/30/20**
- **Active Carrying Bag CB-V7U**

Some accessories are not available in some areas. Please consult your nearest JVC dealer for details on accessories and their availability.

Specifications shown are for SP mode unless otherwise indicated. E & O.E. Design and specifications subject to change without notice.

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No. 86545
January 2000

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5. PARTS LIST

- 5.1 FINAL ASSEMBLY <M2> 5-1

The following table indicate main different points between models GR-AXM220U, AXM220UC, AXM225U and GR-AXM225UC.

MODEL ITEM	GR-AXM220U	GR-AXM220UC	GR-AXM225U	GR-AXM225UC
DC LIGHT	Not used	←	Used	←

Note: Mark ← is same as left.

The following table indicate different parts number between models GR-AXM220U, AXM220UC, AXM225U and GR-AXM225UC.

PACKING ASSEMBLY<M1>

REF NO.	MODEL ITEM	GR-AXM220U	GR-AXM220UC	GR-AXM225U	GR-AXM225UC
2	PACKING CASE	LY31561-007A	LY31561-008A	LY31561-031A	LY31561-038A
⚠ 5	IB(EN)	LYT0478-001A	←	LYT0538-001A	←
7	REGIST. CARD	BT-51020-2	–	BT-51020-2	–
13	WARRANTY CARD	–	BT-52004-1	–	BT-52004-1
⚠ 14	IB (FR)	–	LYT0478-002A	–	LYT0547-001A
15	SER. NET CARD	–	BT-20071B	–	BT-20071B

Note: Mark – is not used. Mark ← is same as left.

FINAL ASSEMBLY <M2>

REF NO.	MODEL ITEM	GR-AXM220U	GR-AXM220UC	GR-AXM225U	GR-AXM225UC
⚠ 101	LOWER CASE ASSY	LY10122-033A	←	LY10122-047A	←
106	FRONT COVER ASSY	LY10124-041A	←	LY10124-059A	←
106R	COVER (LIGHT)	LY30934-001A	←	–	–
110	TOP COVER	LY10129-074A	←	LY10129-0A1A	←
116	DC LIGHT ASSY	–	–	LY30860-001B	←
116A	LAMP	–	–	YQ44266	←
⚠ 137	FRAME ASSY	LY20372-002B	←	LY20372-004A	←
137F	CONTACT (LIGHT), X2	–	–	YQ43810	←
137G	E-SI C WIRE C-F	–	–	WJM0118-001A	←
146	KNOB (LIGHT)	–	–	LY41083-001B	←

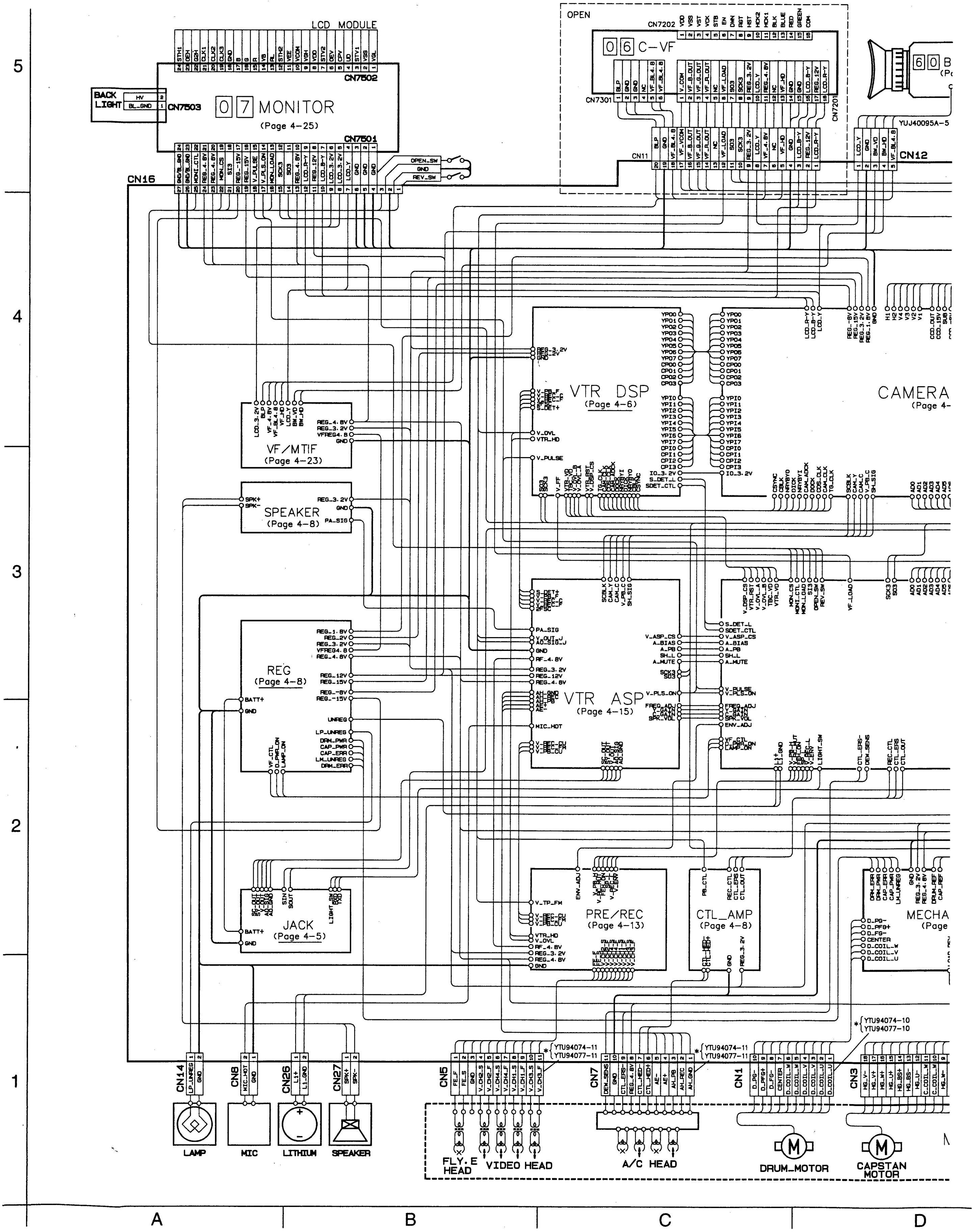
MAIN BOARD ASSEMBLY <01>

REF NO.	MODEL ITEM	GR-AXM220U	GR-AXM220UC	GR-AXM225U	GR-AXM225UC
PW	MAIN BOARD ASSY	YB10271UL-02	←	YB10271UM-03	←
IC3004	IC	–	–	TC74VHC74FT	←
Q3005	TRANSISTOR	–	–	DTA144EE	←
Q6201	TRANSISTOR	–	–	2SA1774/QR/-X	←
Q6202	TRANSISTOR	–	–	2SD1628/FG/-X	←
Q6203	TRANSISTOR	–	–	2SC4617/QR/-X	←
D3002	DIODE	–	–	DAN222	←
R3033	MG RESISTOR	–	–	NRSA63J-103X	←
R3035	MG RESISTOR	–	–	NRSA63J-103X	←
R6201	MG RESISTOR	–	–	NRSA63J-103X	←
R6202	MG RESISTOR	–	–	NRSA63J-100X	←
R6203	MG RESISTOR	–	–	NRSA63J-103X	←
R6205	MG RESISTOR	–	–	NRSA63J-184X	←
R6206	MG RESISTOR	–	–	NRSA63J-102X	←
C6201	E CAPACITOR	–	–	NEA71CM-106X	←
SW503	SLIDE SWITCH	–	–	NSW0092-001X	←
CN14	CONNECTOR	–	–	QGA1201C2-02X	←

Note: Mark – is not used. Mark ← is same as left.

SECTION 4
CHARTS AND DIAGRAMS

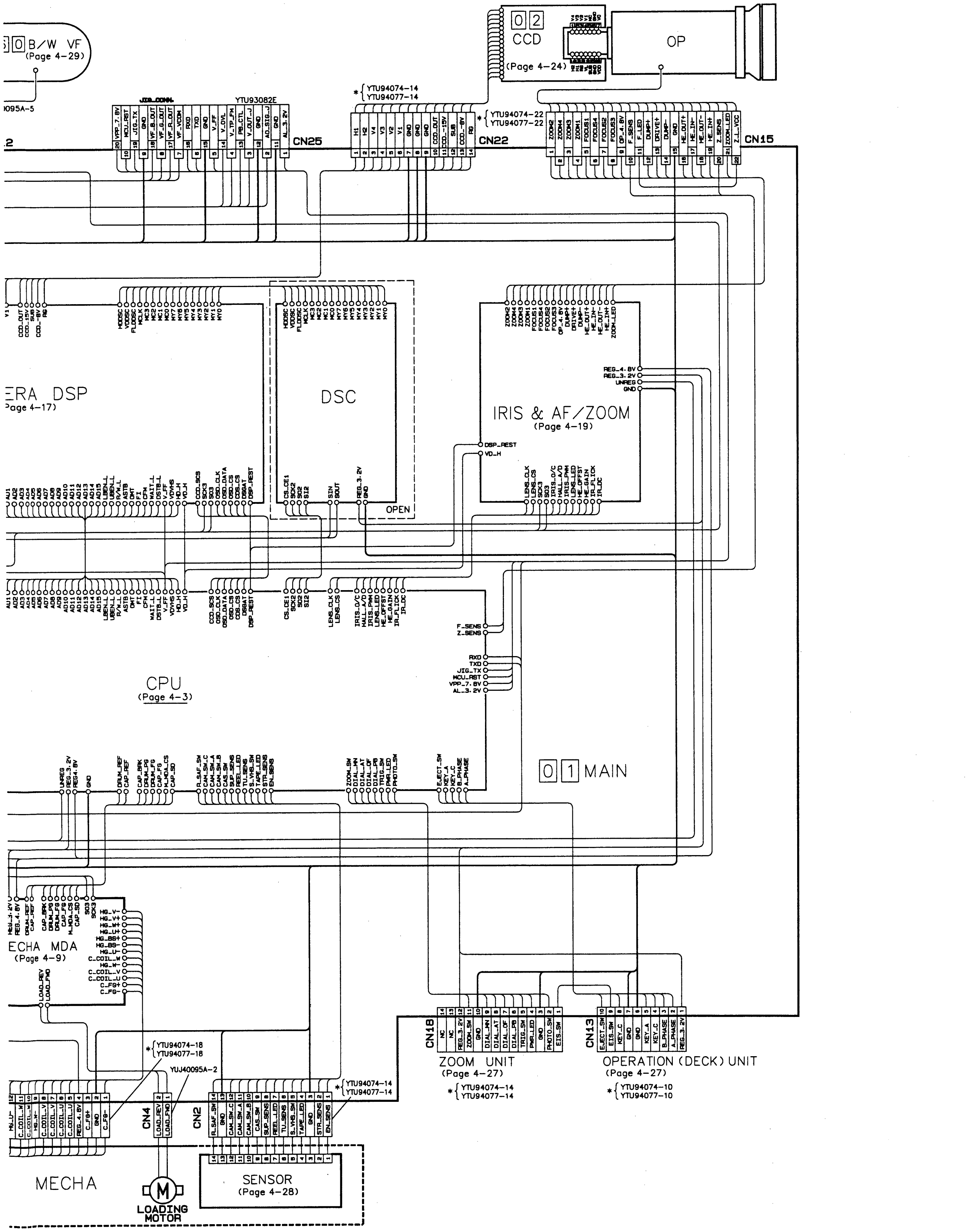
4.1 BOARD INTERCONNECTIONS


5
4
3
2
1
A
B
C
D
LCD MODULE
CN7502
BACK LIGHT
HV
BL_GND
CN7503
07 MONITOR
(Page 4-25)
CN7501
OPEN_SW
GND
REV_SW
CN16
OPEN
CN7202
06 C-VF
CN7301
CN7201
CN11
60 B
YUJ40095A-5
CN12
VTR DSP
(Page 4-6)
CAMERA
VF/MTIF
(Page 4-23)
SPEAKER
(Page 4-8)
REG
(Page 4-8)
VTR ASP
(Page 4-15)
JACK
(Page 4-5)
PRE/REC
(Page 4-13)
CTL_AMP
(Page 4-8)
MECHA
YTU94074-10
YTU94077-10
YTU94074-11
YTU94077-11
CN14
LP_UNREG
GND
CN8
MIC_HOT
GND
CN26
L1+
L1_GND
CN27
SPK+
SPK-
CN5
CN7
CN1
CN3
LAMP
MIC
LITHIUM
SPEAKER
FLY.E HEAD
VIDEO HEAD
A/C HEAD
DRUM_MOTOR
CAPSTAN MOTOR

***Note:* How to find the page showing the continuative schematic diagram**

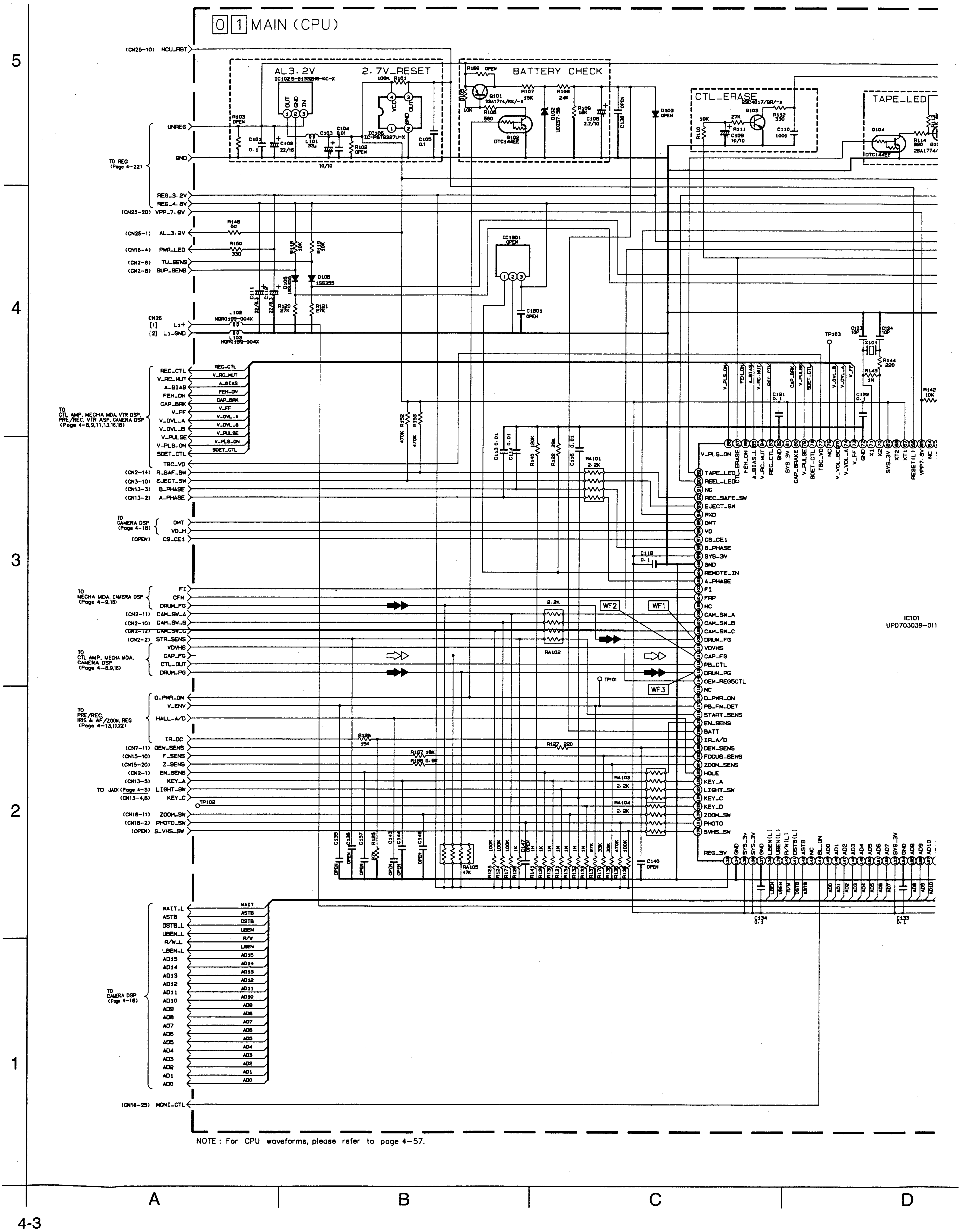
Example) TO CPU (Page 4-5): ***Refer to the GR-AXM220U service manaul (No. 86526)***

TO CPU (Page 4-3): ***Refer to this service manual***



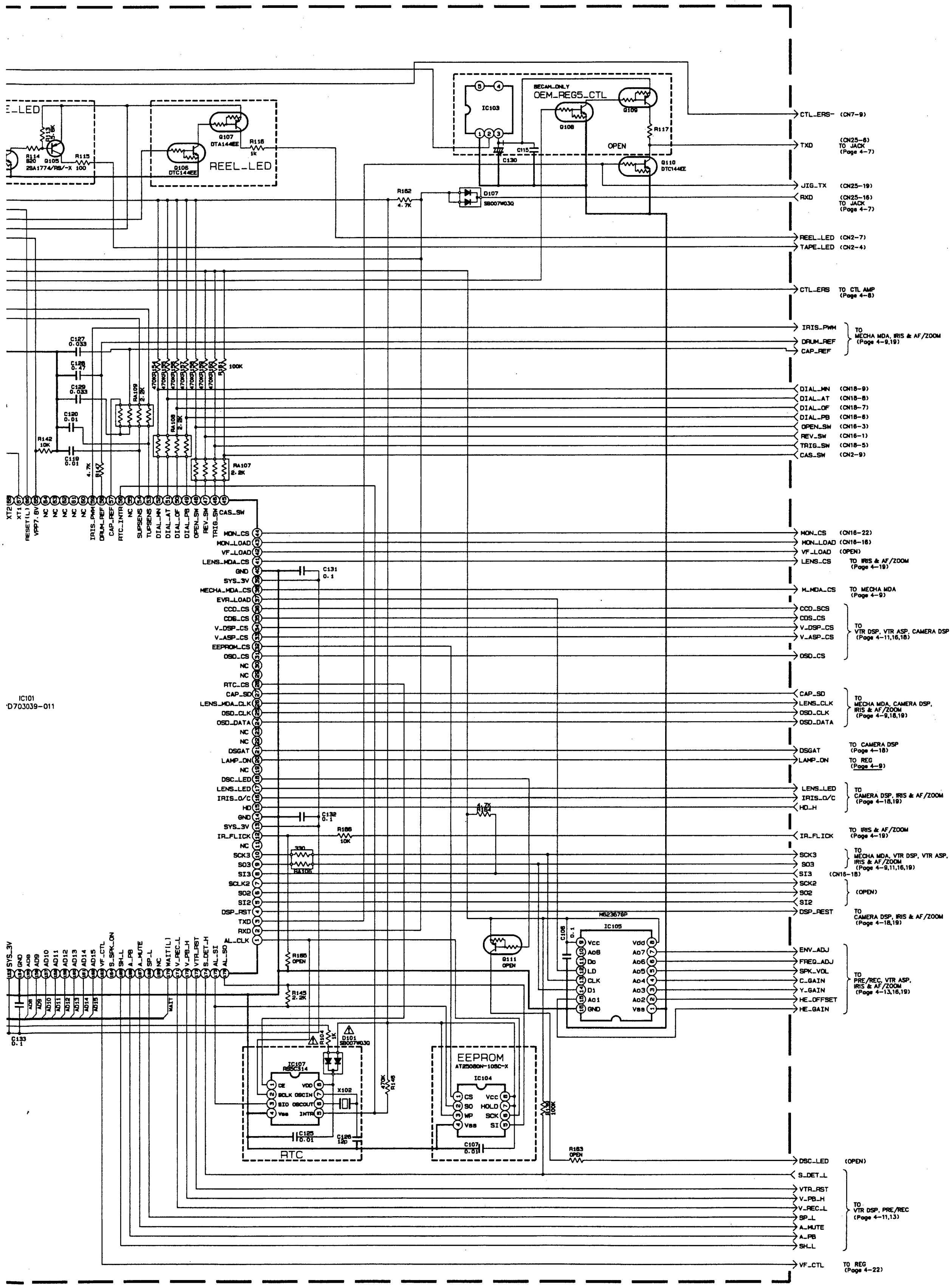
0 B/W VF
(Page 4-29)
0 2 CCD
(Page 4-24)
OP
YTU93082E
CN25
YTU94074-14
YTU94077-14
CN22
YTU94074-22
YTU94077-22
CN15
ZOOM2
ZOOM4
ZOOM3
ZOOM1
FOCUS1
FOCUS4
FOCUS2
FOCUS3
OP_4.8V
F_SENS
F_LED
DUMP+
DRIVE+
DUMP-
GND
HE_OUT+
HE_IN-
HE_OUT-
HE_IN+
Z_SENS
ZOOM_LED
Z_L_VCC
H1
H2
V4
V3
V2
V1
CCD_OUT
CCD_-15V
SUB
CCD_-8V
RG
ERA DSP
Page 4-17)
DSC
OPEN
IRIS & AF/ZOOM
(Page 4-19)
REG_4.8V
REG_3.2V
UNREG
GND
DSP_REST
VD_H
F_SENS
Z_SENS
RXD
TXD
JIG_TX
MCU_RST
VPP_7.8V
AL_3.2V
CPU
(Page 4-3)
0 1 MAIN
ECHA MDA
(Page 4-9)
LOAD_REV
LOAD_FWD
ZOOM UNIT
(Page 4-27)
CN18
NC
REG_3.2V
ZOOM_SW
DIAL_AT
DIAL_DF
DIAL_PB
TRIG_SW
PWR_LED
PHOTO_SW
EIS_SW
YTU94074-14
YTU94077-14
CN13
EJECT_SW
KEY_C
KEY_A
B_PHASE
A_PHASE
OPERATION (DECK) UNIT
(Page 4-27)
YTU94074-10
YTU94077-10
YTU94074-18
YTU94077-18
YUJ40095A-2
CN4
LOAD_REV
LOAD_FWD
CN2
MECHA
LOADING MOTOR
SENSOR
(Page 4-28)
E
F
G
H

4.2 CPU SCHEMATIC DIAGRAM


0 1 MAIN (CPU)
AL3.2V
2.7V_RESET
BATTERY CHECK
CTL_ERASE
TAPE_LED
IC101
UPD703039-011
WF1
WF2
WF3
TO REG (Page 4-22)
TO CTL AMP, MECHA MDA, VTR DSP, PRE/REC, VTR ASP, CAMERA DSP (Page 4-8,9,11,13,16,18)
TO CAMERA DSP (Page 4-18)
TO MECHA MDA, CAMERA DSP (Page 4-9,18)
TO CTL AMP, MECHA MDA, CAMERA DSP (Page 4-8,9,18)
TO PRE/REC, IRIS & AF/ZOOM, REG (Page 4-13,19,22)
TO CAMERA DSP (Page 4-18)
A
B
C
D
1
2
3
4
5

NOTE : For CPU waveforms, please refer to page 4-57.

Note: How to find the page showing the continuative schematic diagram
Example) TO CPU (Page 4-5): ***Refer to the GR-AXM220U service manaul (No. 86526)***
TO CPU (Page 4-3): ***Refer to this service manual***



REEL_LED
Q107 DTA144EE
Q106 DTC144EE
R116 1k
Q105 2SA1774/RS/-X
R115 100
R114
R113
BECAM_ONLY
OEM_REG5_CTL
IC103
Q108
Q109
Q110 DTC144EE
R117
OPEN
C115
C130
R162 4.7K
D107 SB007W03Q
CTL_ERS- (CN7-9)
TXD (CN25-6) TO JACK (Page 4-7)
JIG_TX (CN25-19)
RXD (CN25-16) TO JACK (Page 4-7)
REEL_LED (CN2-7)
TAPE_LED (CN2-4)
CTL_ERS TO CTL AMP (Page 4-8)
IRIS_PWM
DRUM_REF
CAP_REF
TO MECHA MDA, IRIS & AF/ZOOM (Page 4-9,19)
DIAL_MN (CN18-9)
DIAL_AT (CN18-8)
DIAL_OF (CN18-7)
DIAL_PB (CN18-6)
OPEN_SW (CN16-3)
REV_SW (CN16-1)
TRIG_SW (CN16-5)
CAS_SW (CN2-9)
C127 0.033
C128 0.47
C129 0.033
C120 0.01
C119 0.01
R142 10K
RA109 2.2K
RA108 2.2K
RA107 2.2K
100K
IC101
D703039-011
XT2
XT1
RESET(L)
VPP7.8V
NC
IRIS_PWM
DRUM_REF
CAP_REF
RTC_INTR
SUPSENS
TUPSENS
DIAL_MN
DIAL_AT
DIAL_OF
DIAL_PB
OPEN_SW
REV_SW
TRIG_SW
CAS_SW
MON_CS
MON_LOAD
VF_LOAD
LENS_MDA_CS
GND
SYS_3V
MECHA_MDA_CS
EVR_LOAD
CCD_CS
CDS_CS
V_DSP_CS
V_ASP_CS
EEPROM_CS
OSD_CS
RTC_CS
CAP_SD
LENS_MDA_CLK
OSD_CLK
OSD_DATA
DSGAT
LAMP_ON
DSC_LED
LENS_LED
IRIS_O/C
HD
IR_FLICK
SCK3
SO3
SI3
SCLK2
SO2
SI2
DSP_RST
TXD
RXD
AL_CLK
C131 0.1
C132 0.1
R166 10K
RA106
330
MON_CS (CN16-22)
MON_LOAD (CN16-16)
VF_LOAD (OPEN)
LENS_CS TO IRIS & AF/ZOOM (Page 4-19)
M_MDA_CS TO MECHA MDA (Page 4-9)
CCD_SCS
CDS_CS
V_DSP_CS
V_ASP_CS
OSD_CS
TO VTR DSP, VTR ASP, CAMERA DSP (Page 4-11,16,18)
CAP_SD
LENS_CLK
OSD_CLK
OSD_DATA
TO MECHA MDA, CAMERA DSP, IRIS & AF/ZOOM (Page 4-9,18,19)
DSGAT TO CAMERA DSP (Page 4-18)
LAMP_ON TO REG (Page 4-9)
LENS_LED
IRIS_O/C
HD_H
TO CAMERA DSP, IRIS & AF/ZOOM (Page 4-18,19)
IR_FLICK TO IRIS & AF/ZOOM (Page 4-19)
SCK3
SO3
SI3 (CN16-18)
TO MECHA MDA, VTR DSP, VTR ASP, IRIS & AF/ZOOM (Page 4-9,11,16,19)
SCK2
SO2
SI2
(OPEN)
DSP_REST TO CAMERA DSP, IRIS & AF/ZOOM (Page 4-18,19)
R164 4.7K
M62367GP
IC105
C108 0.1
Q111 OPEN
VCC VDD
AO8 AO7
DO AO6
LD AO5
CLK AO4
DI AO3
AO1 AO2
GND VSS
ENV_ADJ
FREQ_ADJ
SPK_VOL
C_GAIN
Y_GAIN
HE_OFFSET
HE_GAIN
TO PRE/REC, VTR ASP, IRIS & AF/ZOOM (Page 4-13,16,19)
SYS_3V
GND
AD8
AD9
AD10
AD11
AD12
AD13
AD14
AD15
VF_CTL
S_SPK_ON
SH_L
A_PB
A_MUTE
SP_L
NC
WAIT(L)
V_REC_L
V_PB_H
VTR_RST
S_DET_H
AL_SI
AL_SO
C133 0.1
R165 OPEN
R145 2.2K
R144 1K
D101 SB007W03Q
IC107 RS5C314
CE VDD
SCLK OSCIN
SIO OSCOUT
Vss INTR
X102
C125 0.01
C126 12P
RTC
R146 470K
EEPROM
AT25080N-10SC-X
IC104
CS VCC
SO HOLD
WP SCK
Vss SI
C107 0.01
R147 100K
R163 OPEN
DSC_LED (OPEN)
S_DET_L
VTR_RST
V_PB_H
V_REC_L
SP_L
A_MUTE
A_PB
SH_L
TO VTR DSP, PRE/REC (Page 4-11,13)
VF_CTL TO REG (Page 4-22)

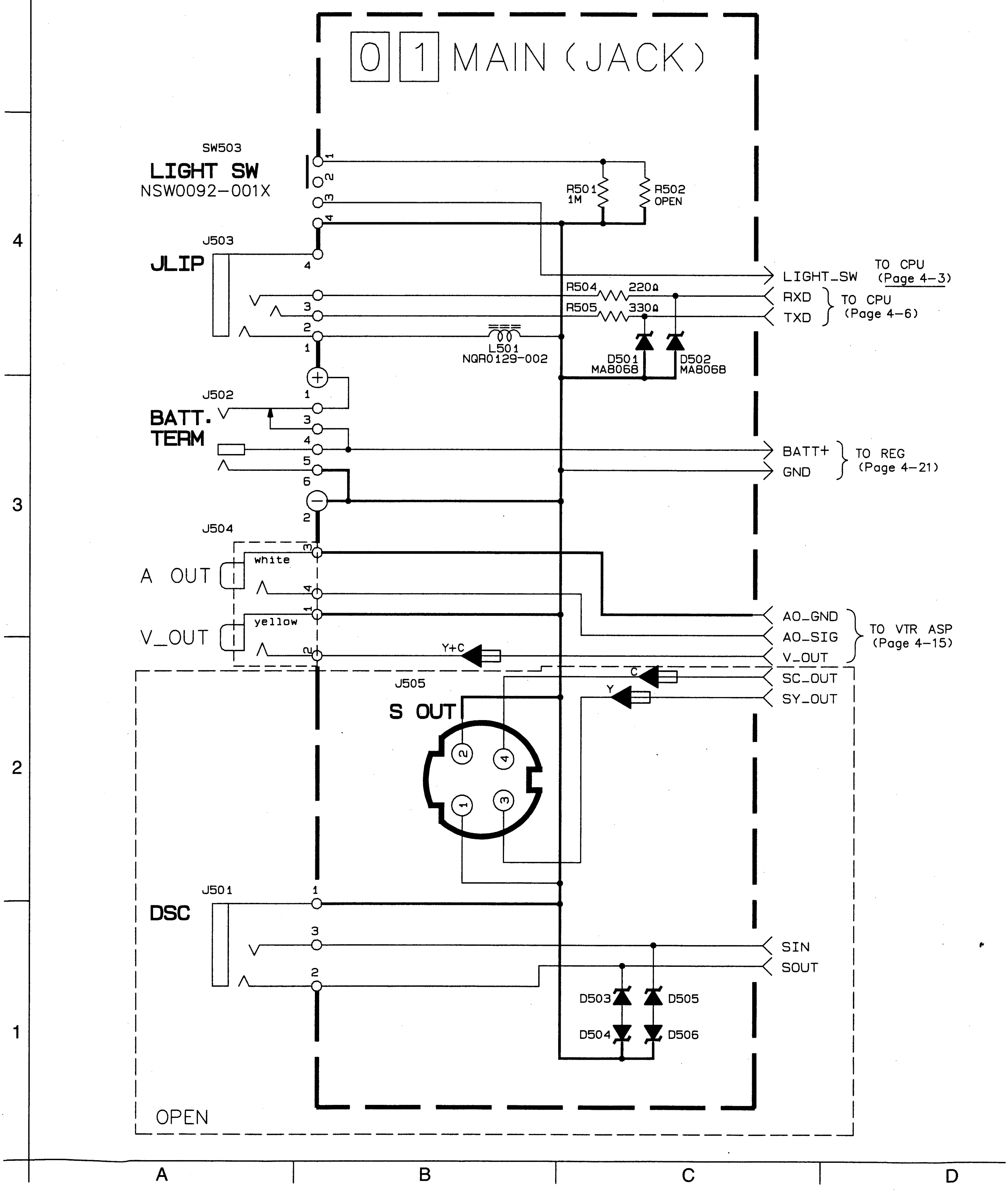
E	F	G	H

4.3 JACK SCHEMATIC DIAGRAM

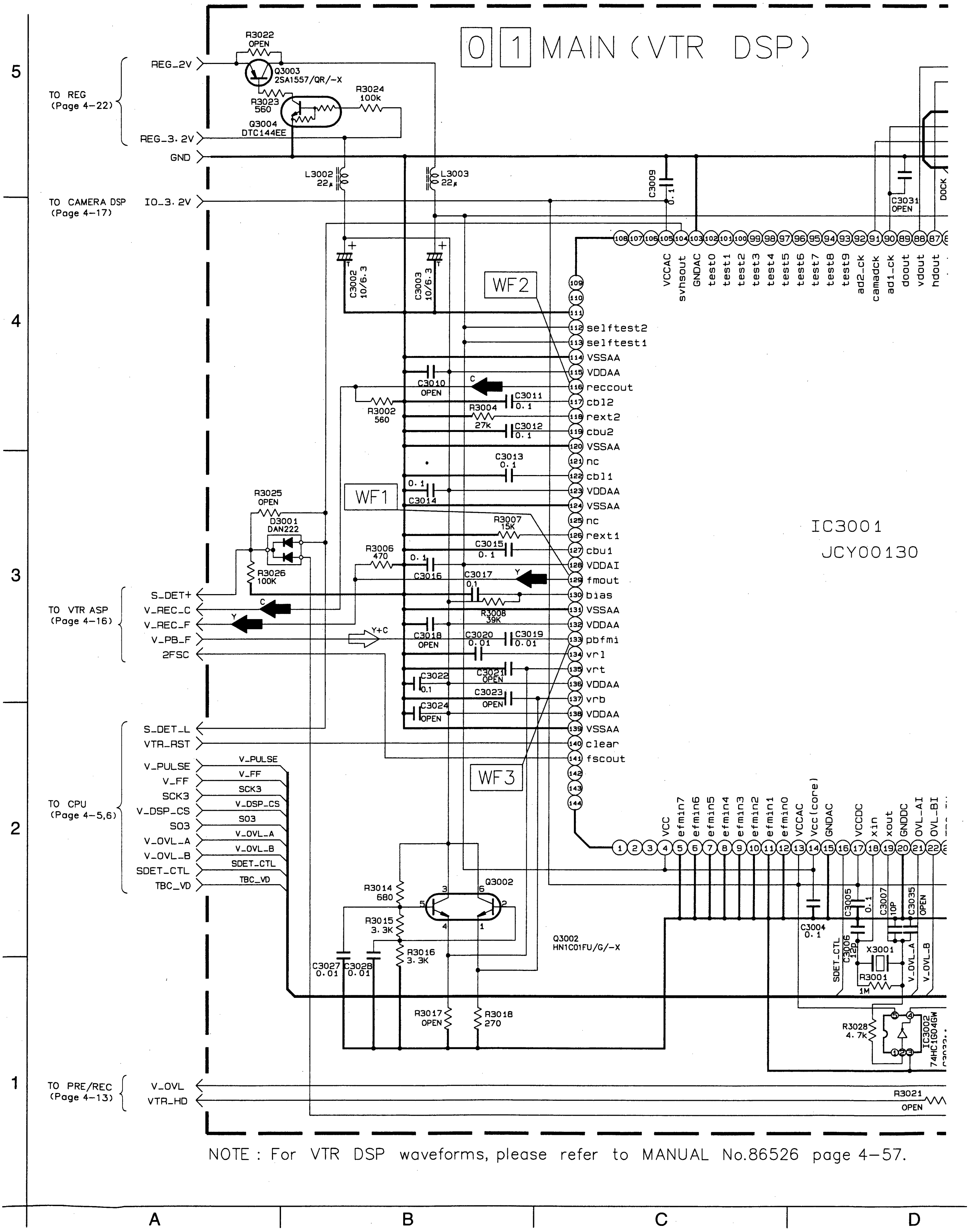
***Note:** How to find the page showing the continuative schematic diagram*

Example) TO CPU (Page 4-5): ***Refer to the GR-AXM220U service manaul (No. 86526)***

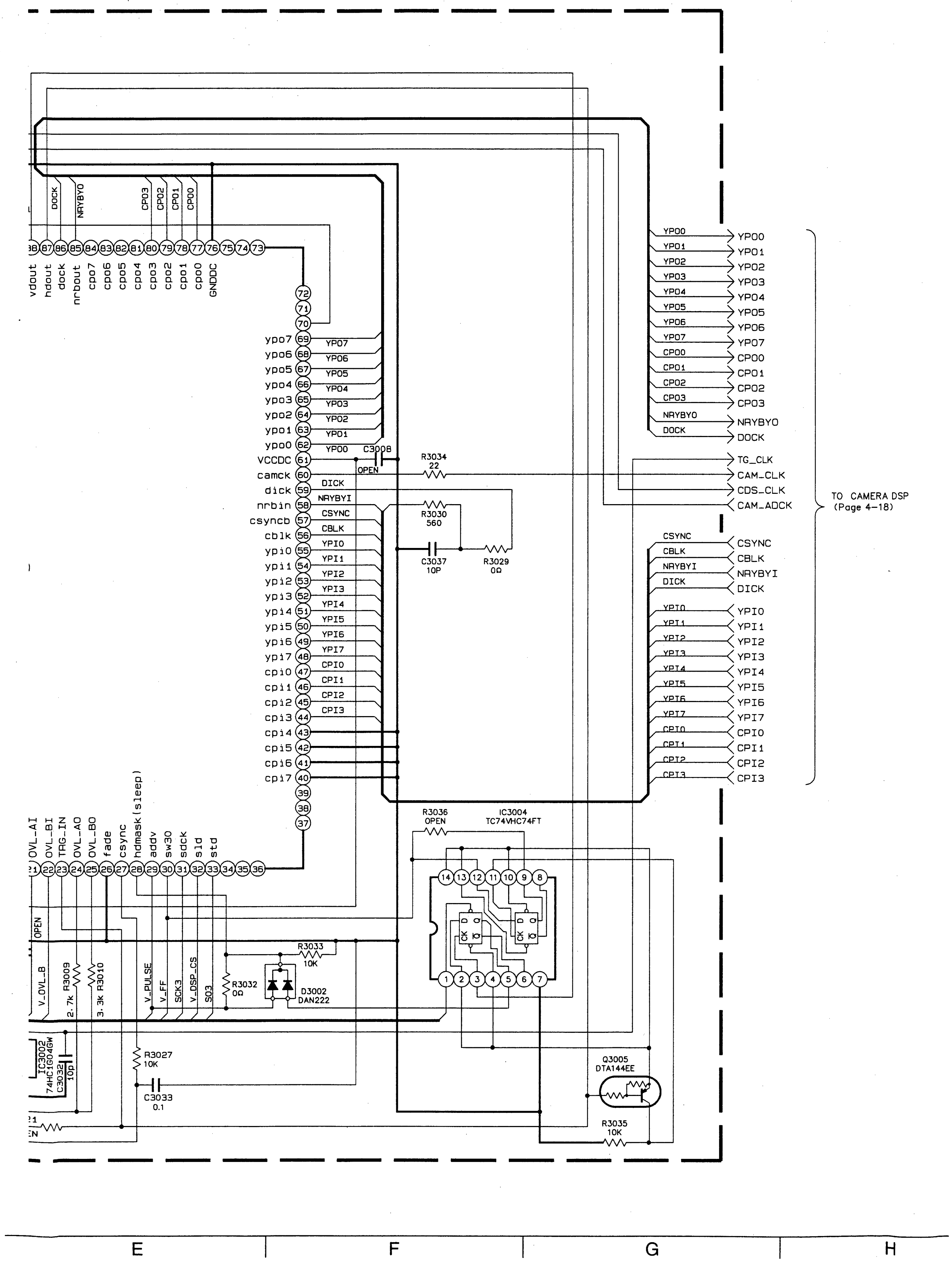
TO CPU (Page 4-3): ***Refer to this service manual***


5
4
3
2
1
A
B
C
D
0 1 MAIN (JACK)
SW503
LIGHT SW
NSW0092-001X
J503
JLIP
J502
BATT. TERM
J504
A OUT
white
V_OUT
yellow
J505
S OUT
J501
DSC
OPEN
R501 1M
R502 OPEN
R504 220Ω
R505 330Ω
L501 NQR0129-002
D501 MA8068
D502 MA8068
D503
D504
D505
D506
Y+C
C
Y
LIGHT_SW
TO CPU (Page 4-3)
RXD
TXD
TO CPU (Page 4-6)
BATT+
GND
TO REG (Page 4-21)
AO_GND
AO_SIG
V_OUT
TO VTR ASP (Page 4-15)
SC_OUT
SY_OUT
SIN
SOUT

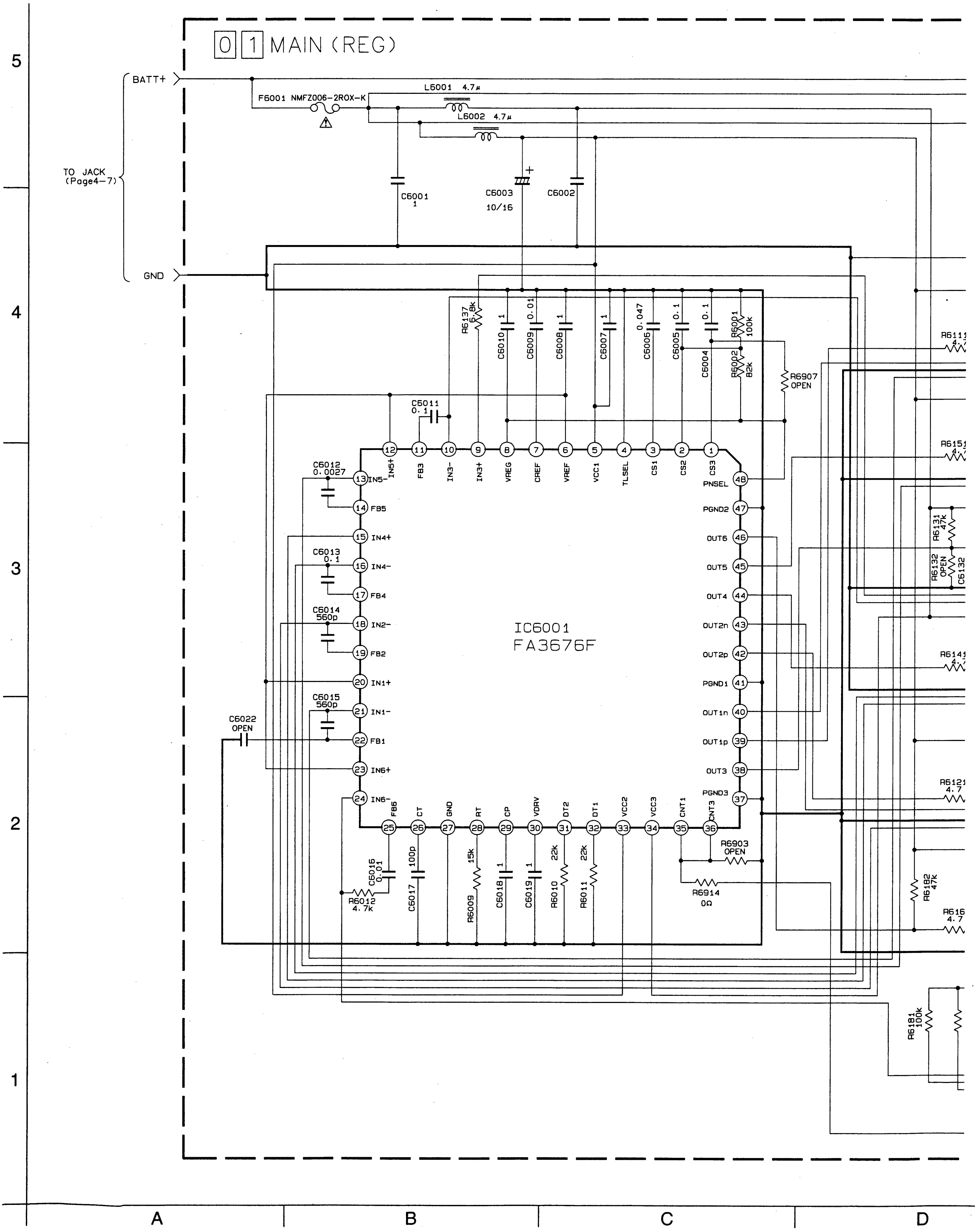
4.4 VTR DSP SCHEMATIC DIAGRAM


01 MAIN (VTR DSP)
TO REG (Page 4-22)
REG_2V
REG_3.2V
GND
TO CAMERA DSP (Page 4-17)
IO_3.2V
R3022 OPEN
Q3003 2SA1557/QR/-X
R3023 560
Q3004 DTC144EE
R3024 100k
L3002 22μ
L3003 22μ
C3002 10/6.3
C3003 10/6.3
C3009 0.1
C3031 OPEN
DOCK
WF2
WF1
WF3
IC3001 JCY00130
VCCAC
svhsout
GNDAC
test0
test1
test2
test3
test4
test5
test6
test7
test8
test9
ad2_ck
camadck
ad1_ck
doout
vdout
hdout
selftest2
selftest1
VSSAA
VDDAA
reccout
cbl2
rext2
cbu2
VSSAA
nc
cbl1
VDDAA
VSSAA
nc
rext1
cbu1
VDDAI
fmout
bias
VSSAA
VDDAA
pbfmi
vrl
vrt
VDDAA
vrb
VDDAA
VSSAA
clear
fscout
C3010 OPEN
C3011 0.1
R3002 560
R3004 27k
C3012 0.1
C3013 0.1
C3014 0.1
R3007 15K
C3015 0.1
R3006 470
C3016 0.1
C3017 0.1
R3008 39K
C3018 OPEN
C3020 0.01
C3019 0.01
C3021 OPEN
C3022 0.1
C3023 OPEN
C3024 OPEN
R3025 OPEN
D3001 DAN222
R3026 100K
C
Y
Y+C
TO VTR ASP (Page 4-16)
S_DET+
V_REC_C
V_REC_F
V_PB_F
2FSC
S_DET_L
VTR_RST
TO CPU (Page 4-5,6)
V_PULSE
V_FF
SCK3
V_DSP_CS
SO3
V_OVL_A
V_OVL_B
SDET_CTL
TBC_VD
VCC
efmin7
efmin6
efmin5
efmin4
efmin3
efmin2
efmin1
efmin0
VCCAC
Vcc(core)
GNDAC
VCCDC
xin
xout
GNDDC
OVL_AI
OVL_BI
R3014 680
R3015 3.3K
R3016 3.3K
Q3002
Q3002 HN1C01FU/G/-X
C3027 0.01
C3028 0.01
R3017 OPEN
R3018 270
C3004 0.1
C3005 0.1
C3006 12P
C3007 10P
C3035 OPEN
X3001
R3001 1M
SDET_CTL
V_OVL_A
V_OVL_B
R3028 4.7k
IC3002 74HC1G04GW
TO PRE/REC (Page 4-13)
V_OVL
VTR_HD
R3021 OPEN
5
4
3
2
1
A
B
C
D

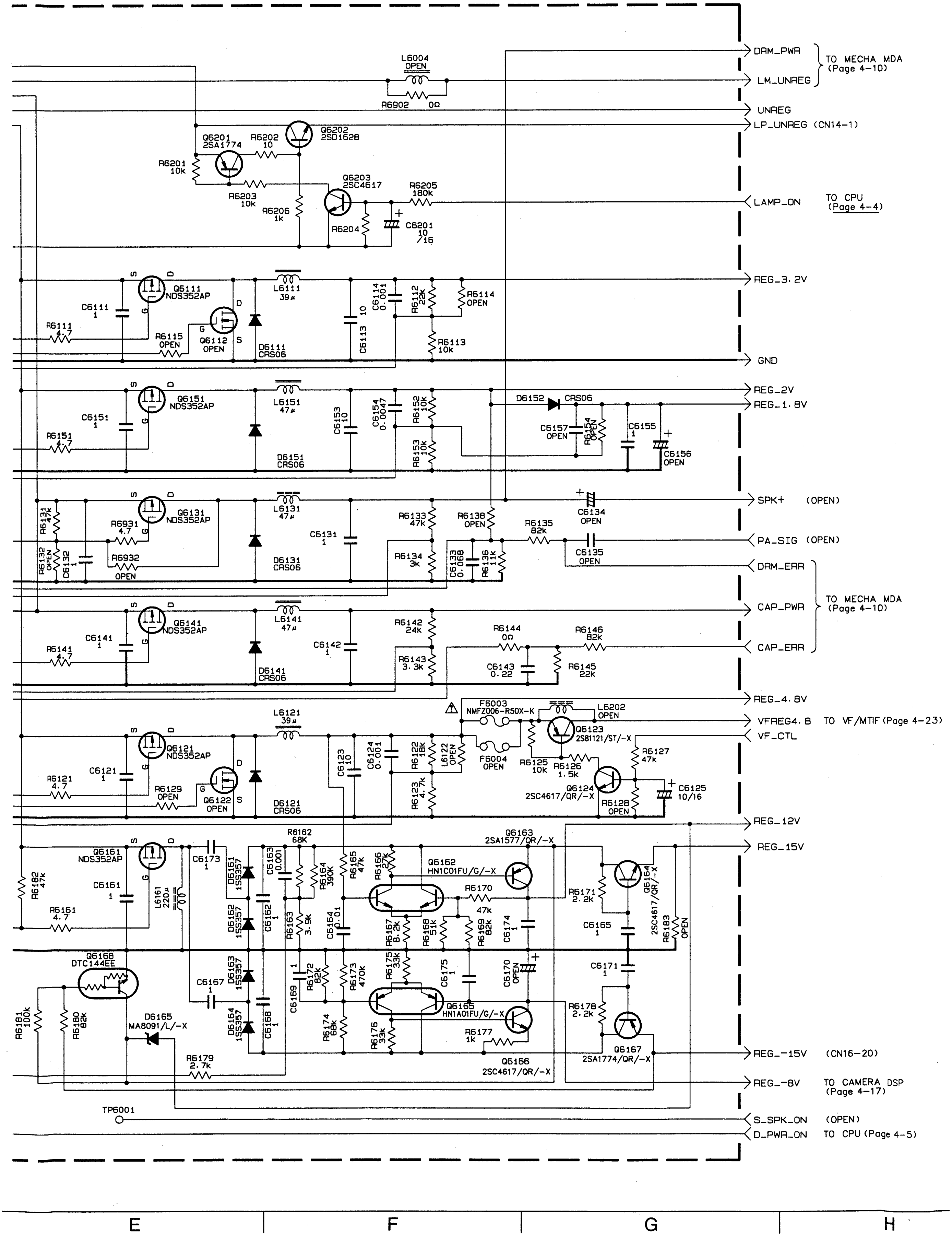
NOTE : For VTR DSP waveforms, please refer to MANUAL No.86526 page 4-57.


DOCK
NRYBYO
CPO3
CPO2
CPO1
CPO0
vdout
hdout
dock
nrbout
cpo7
cpo6
cpo5
cpo4
cpo3
cpo2
cpo1
cpo0
GNDDC
ypo7
ypo6
ypo5
ypo4
ypo3
ypo2
ypo1
ypo0
VCCDC
camck
dick
nrbin
csyncb
cblk
ypi0
ypi1
ypi2
ypi3
ypi4
ypi5
ypi6
ypi7
cpi0
cpi1
cpi2
cpi3
cpi4
cpi5
cpi6
cpi7
C3008
OPEN
R3034
22
R3030
560
C3037
10P
R3029
0Ω
YPO0
YPO1
YPO2
YPO3
YPO4
YPO5
YPO6
YPO7
CPO0
CPO1
CPO2
CPO3
NRYBYO
DOCK
TG_CLK
CAM_CLK
CDS_CLK
CAM_ADCK
CSYNC
CBLK
NRYBYI
DICK
YPI0
YPI1
YPI2
YPI3
YPI4
YPI5
YPI6
YPI7
CPI0
CPI1
CPI2
CPI3
TO CAMERA DSP
(Page 4–18)
OVL_AI
OVL_BI
TRG_IN
OVL_AO
OVL_BO
fade
csync
hdmask(sleep)
addv
sw30
sdck
sld
std
R3036
OPEN
IC3004
TC74VHC74FT
OPEN
V_OVL_B
R3009
2.7k
R3010
3.3k
V_PULSE
V_FF
SCK3
V_DSP_CS
SO3
R3032
0Ω
R3033
10K
D3002
DAN222
IC3002
74HC1G04GW
C3032
10p
R3027
10K
C3033
0.1
Q3005
DTA144EE
R3035
10K
E
F
G
H

4.5 REGULATOR SCHEMATIC DIAGRAM


01 MAIN (REG)
BATT+
GND
TO JACK (Page4-7)
F6001 NMFZ006-2ROX-K
L6001 4.7µ
L6002 4.7µ
C6001 1
C6003 10/16
C6002
R6137 6.8k
C6010 1
C6009 0.01
C6008 1
C6007 1
C6006 0.047
C6005 0.1
C6004 0.1
R6001 100k
R6002 82k
R6907 OPEN
C6011 0.1
C6012 0.0027
C6013 0.1
C6014 560p
C6015 560p
C6022 OPEN
IC6001
FA3676F
1 CS3
2 CS2
3 CS1
4 TLSEL
5 VCC1
6 VREF
7 CREF
8 VREG
9 IN3+
10 IN3-
11 FB3
12 IN5+
13 IN5-
14 FB5
15 IN4+
16 IN4-
17 FB4
18 IN2-
19 FB2
20 IN1+
21 IN1-
22 FB1
23 IN6+
24 IN6-
25 FB6
26 CT
27 GND
28 RT
29 CP
30 VDRV
31 DT2
32 DT1
33 VCC2
34 VCC3
35 CNT1
36 CNT3
37 PGND3
38 OUT3
39 OUT1p
40 OUT1n
41 PGND1
42 OUT2p
43 OUT2n
44 OUT4
45 OUT5
46 OUT6
47 PGND2
48 PNSEL
C6016 0.01
R6012 4.7k
C6017 100p
R6009 15k
C6018 1
C6019 1
R6010 22k
R6011 22k
R6903 OPEN
R6914 0Ω
R6111 4.
R6151 4.
R6131 47k
R6132 OPEN
C6132
R6141 4.
R6121 4.7
R6182 47k
R6161 4.7
R6181 100k
5
4
3
2
1
A
B
C
D

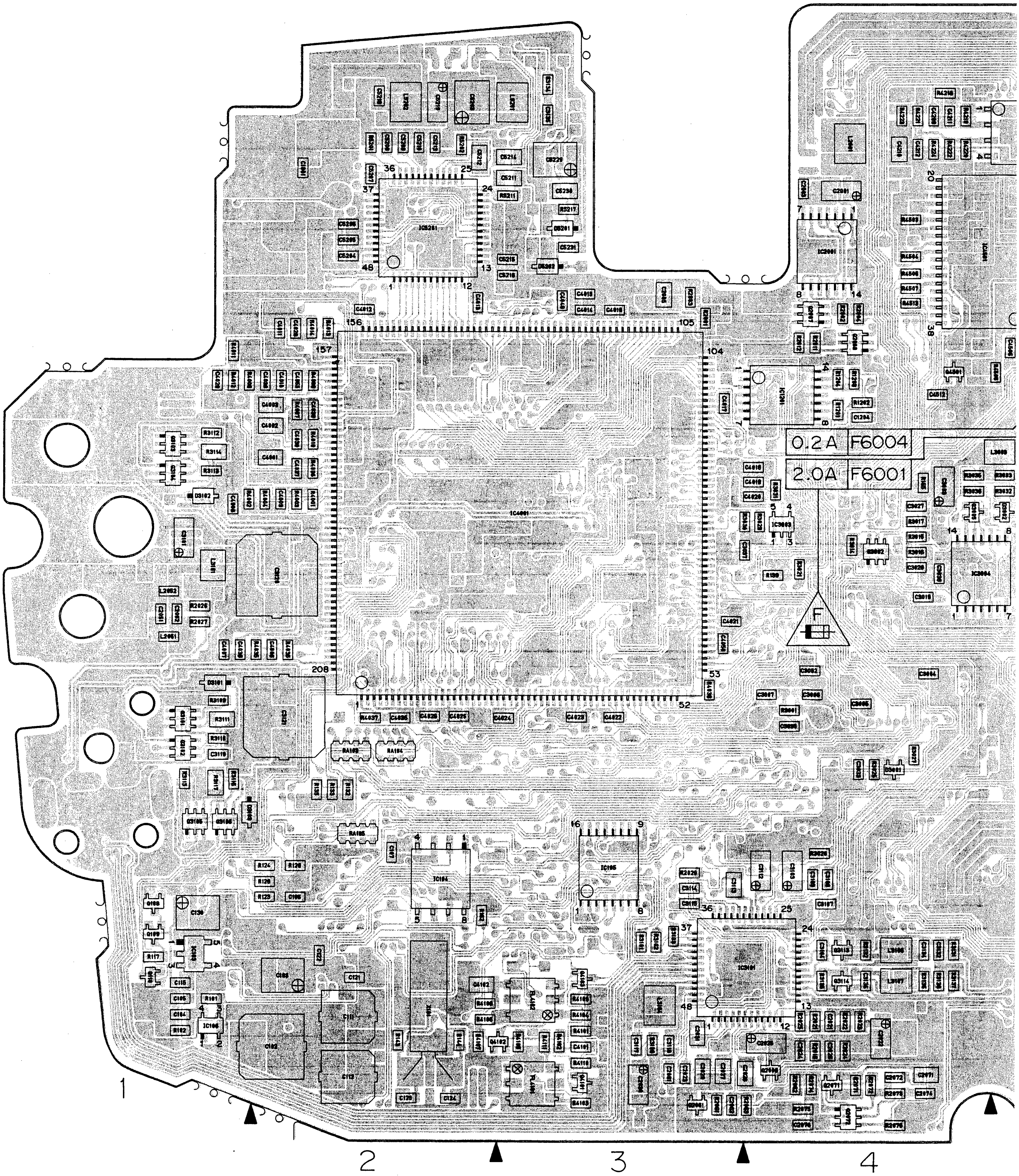
Note: How to find the page showing the continuative schematic diagram
Example) TO CPU (Page 4-5): ***Refer to the GR-AXM220U service manaul (No. 86526)***
TO CPU (Page 4-3): ***Refer to this service manual***

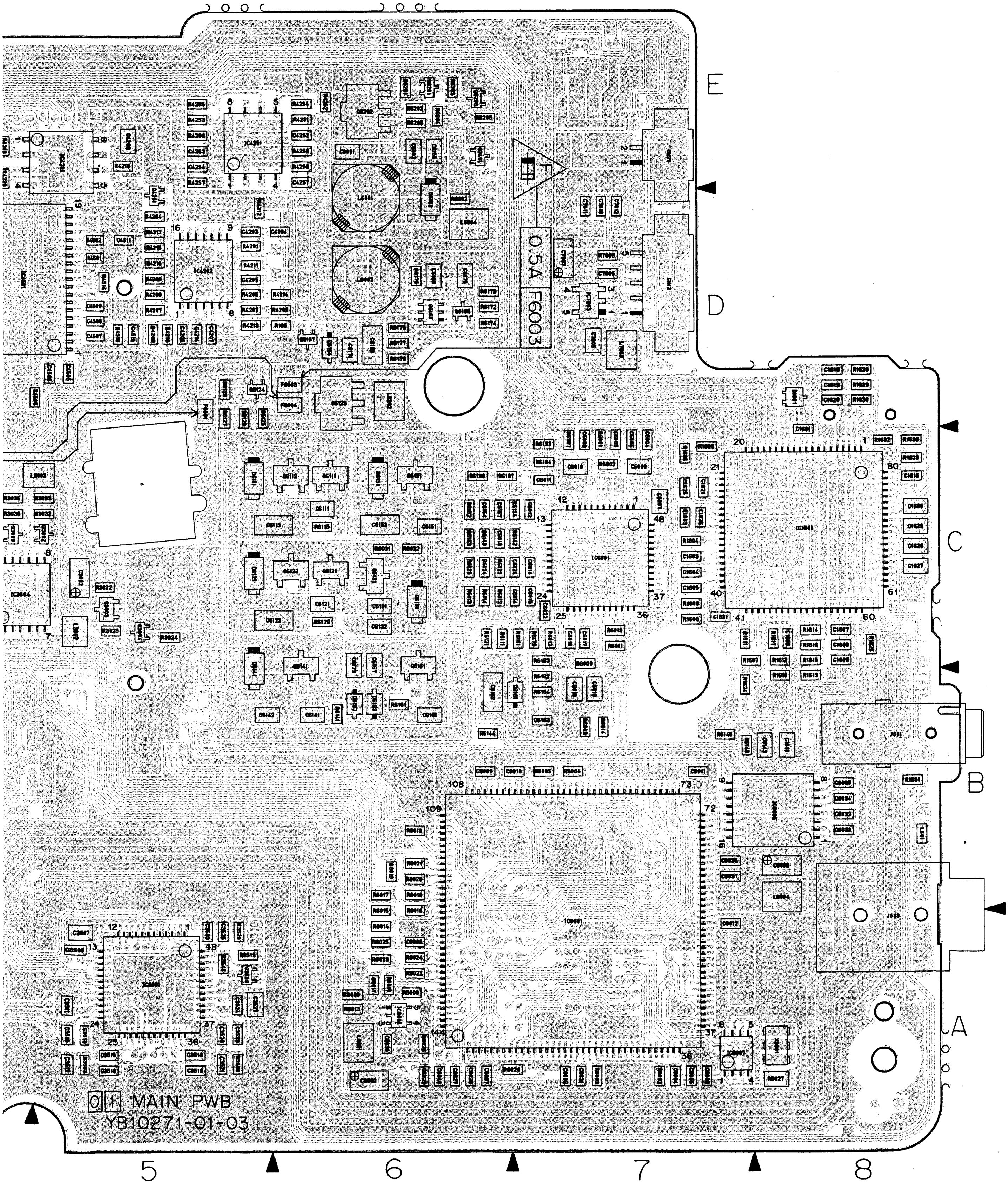


DRM_PWR
LM_UNREG
TO MECHA MDA (Page 4-10)
UNREG
LP_UNREG (CN14-1)
LAMP_ON
TO CPU (Page 4-4)
REG_3.2V
GND
REG_2V
REG_1.8V
SPK+ (OPEN)
PA_SIG (OPEN)
DRM_ERR
CAP_PWR
CAP_ERR
TO MECHA MDA (Page 4-10)
REG_4.8V
VFREG4.8
TO VF/MTIF (Page 4-23)
VF_CTL
REG_12V
REG_15V
REG_-15V (CN16-20)
REG_-8V
TO CAMERA DSP (Page 4-17)
S_SPK_ON (OPEN)
D_PWR_ON
TO CPU (Page 4-5)
L6004 OPEN
R6902 0Ω
Q6201 2SA1774
R6202 10
Q6202 2SD1628
R6201 10k
R6203 10k
Q6203 2SC4617
R6205 180k
R6206 1k
R6204
C6201 10 /16
Q6111 NDS352AP
C6111 1
R6111 4.7
R6115 OPEN
Q6112 OPEN
L6111 39μ
D6111 CRS06
C6113 10
C6114 0.001
R6112 22k
R6114 OPEN
R6113 10k
Q6151 NDS352AP
C6151 1
R6151 4.7
L6151 47μ
D6151 CRS06
C6153 10
C6154 0.0047
R6152 10k
R6153 10k
D6152 CRS06
C6157 OPEN
R6154 OPEN
C6155 1
C6156 OPEN
R6131 47k
R6132 OPEN
C6132 1
Q6131 NDS352AP
R6931 4.7
R6932 OPEN
L6131 47μ
D6131 CRS06
C6131 1
R6133 47k
R6134 3k
C6133 0.068
R6138 OPEN
R6136 11k
R6135 82k
C6134 OPEN
C6135 OPEN
Q6141 NDS352AP
C6141 1
R6141 4.7
L6141 47μ
D6141 CRS06
C6142 1
R6142 24k
R6143 3.3k
R6144 0Ω
C6143 0.22
R6146 82k
R6145 22k
F6003 NMFZ006-R50X-K
L6202 OPEN
F6004 OPEN
Q6123 2SB1121/ST/-X
R6127 47k
L6121 39μ
Q6121 NDS352AP
C6121 1
R6121 4.7
R6129 OPEN
Q6122 OPEN
D6121 CRS06
C6123 10
C6124 0.001
R6122 18k
L6122 OPEN
R6123 4.7k
R6125 10k
R6126 1.5k
Q6124 2SC4617/QR/-X
R6128 OPEN
C6125 10/16
Q6161 NDS352AP
C6161 1
R6162 47k
R6161 4.7
L6161 220μ
C6173 1
D6161 1SS357
D6162 1SS357
C6163 0.001
C6162 1
R6162 68K
R6164 390K
R6163 3.9K
C6164 0.01
R6165 47k
R6166 27k
Q6163 2SA1577/QR/-X
Q6162 HN1C01FU/G/-X
R6170 47k
R6167 8.2k
R6168 51k
R6169 82k
C6174 1
R6171 2.2k
C6165 1
Q6164 2SC4617/QR/-X
R6183 OPEN
C6171 1
Q6168 DTC144EE
R6181 100k
R6180 82k
D6165 MA8091/L/-X
C6167 1
D6163 1SS357
D6164 1SS357
C6168 1
C6169 1
R6172 82k
R6173 470k
R6175 33k
C6175 1
C6170 OPEN
Q6165 HN1A01FU/G/-X
R6174 68k
R6176 33k
R6177 1k
R6178 2.2k
Q6167 2SA1774/QR/-X
Q6166 2SC4617/QR/-X
R6179 2.7k
TP6001
E
F
G
H

4.6 MAIN CIRCUIT BOARD

FOIL SIDE (B)


0.2A F6004
2.0A F6001
IC4001
IC5201
IC2001
IC1201
IC3004
IC3101
IC104
IC105
1
2
3
4



E
D
C
B
A
5
6
7
8
0.5A F6003
F
01 MAIN PWB
YB10271-01-03
IC4201
IC4202
IC5601
IC1601
IC6601
J501
J503
L6001
L6002

COMPONENT PARTS LOCATION GUIDE (MAIN)

CAPACITOR

REF.No.	LOCATION		
C101	A	C	1A
C102	B	C	2A
C103	B	C	2A
C104	B	C	1A
C105	B	C	1A
C106	B	C	2A
C107	B	C	2B
C108	A	C	1C
C109	A	C	3D
C110	A	C	3D
C111	B	C	2A
C112	B	C	2A
C113	A	C	2A
C114	A	C	2A
C115	B	C	1A
C116	A	C	8C
C118	A	C	2A
C119	A	C	3A
C120	A	C	3A
C121	B	C	2A
C122	B	C	2A
C123	B	C	2A
C124	B	C	2A
C125	A	C	1A
C126	A	C	1A
C127	A	C	3A
C128	A	C	2A
C129	A	C	3A
C130	B	C	1A
C131	A	C	3A
C132	A	C	3B
C133	A	C	2C
C134	A	C	2C
C135	A	C	2B
C136	A	C	2B
C137	A	C	4B
C138	A	C	1B
C140	A	C	2B
C143	A	C	2B
C144	A	C	7B
C146	A	C	4E
C147	A	C	4E
C1201	A	C	4D
C1202	A	C	4D
C1203	A	C	4D
C1204	B	C	4C
C1205	A	C	4D
C1206	A	C	4D
C1207	A	C	4D
C1601	B	C	8C
C1602	A	C	7D
C1603	B	C	7C
C1604	B	C	7C
C1605	B	C	7C
C1606	B	C	8C
C1607	B	C	8C
C1608	B	C	8C
C1609	B	C	8C
C1610	B	C	8B
C1611	A	C	7C
C1612	A	C	8C
C1613	A	C	7C
C1614	A	C	8C
C1615	A	C	7C
C1616	B	C	8C
C1617	A	C	7C
C1618	B	C	8D
C1619	B	C	8D
C1620	B	C	8D
C1621	A	C	8C
C1622	A	C	8C
C1623	A	C	7C
C1624	B	C	7C
C1625	B	C	7C
C1626	B	C	7C
C1627	B	C	8C
C1628	B	C	8C
C1629	B	C	8C
C1630	B	C	8C
C1631	B	C	7C
C1801	B	C	2D
C2001	B	C	4D
C2002	A	C	4D
C2003	B	C	4D
C2004	A	C	4D
C2005	B	C	3D
C2009	A	C	4A
C2010	A	C	4A
C2021	B	C	4A
C2022	B	C	4A
C2023	B	C	3A
C2024	B	C	4A
C2025	B	C	4A
C2026	B	C	4A
C2027	B	C	3A
C2028	B	C	4A
C2029	B	C	3A
C2030	B	C	3A
C2031	B	C	3A
C2051	B	C	1C
C2052	B	C	1C
C2061	B	C	3A
C2062	B	C	3A
C2071	B	C	4A
C2072	B	C	4A
C2073	A	C	4A
C2074	B	C	4A
C2076	B	C	4A
C2401	A	C	6D
C2402	A	C	6E
C2403	A	C	6E
C2404	A	C	6E
C2405	A	C	7D
C3002	B	C	5C
C3003	B	C	4C
C3004	B	C	4B
C3005	B	C	4B
C3006	B	C	4B
C3007	B	C	4B
C3008	A	C	3C
C3009	A	C	4D
C3010	A	C	4C
C3011	A	C	4C
C3012	A	C	5C
C3013	A	C	4C
C3014	A	C	4C
C3015	A	C	4C
C3016	A	C	4C
C3017	A	C	4C
C3018	A	C	5C
C3019	B	C	4C
C3020	A	C	4C
C3021	A	C	4C
C3022	A	C	5C
C3023	A	C	4C
C3024	A	C	4C
C3027	B	C	4C
C3028	B	C	4C
C3031	A	C	4D
C3032	B	C	4B
C3033	B	C	4B
C3035	B	C	4B
C3037	B	C	3C
C3038	B	C	4C
C3101	B	C	1C
C3103	B	C	4B
C3104	B	C	4A
C3105	A	C	4A
C3106	A	C	4A
C3107	B	C	4A
C3108	B	C	4B
C3109	B	C	4B
C3112	B	C	4B
C3113	B	C	3B
C3114	B	C	3B
C3115	B	C	3A
C3117	B	C	3A
C3118	B	C	3A
C3119	B	C	1B
C3120	B	C	2C
C3121	B	C	2B
C3132	B	C	4A
C3134	B	C	4A
C3135	B	C	3E
C3136	B	C	4A
C3501	A	C	5A
C3502	A	C	5A
C3503	B	C	5A
C3504	A	C	5A
C3505	A	C	5A
C3506	B	C	5A
C3507	B	C	5A
C3508	A	C	5A
C3509	A	C	5A
C3510	B	C	5A
C3511	B	C	5A
C3512	B	C	5A
C3513	B	C	5A
C3514	A	C	5A
C3515	B	C	5A
C3516	B	C	5A
C3517	A	C	5A
C3518	B	C	5A
C3519	B	C	5A
C3520	B	C	5A
C3521	B	C	5A
C3522	A	C	5A
C3523	B	C	5A
C3524	B	C	5A
C3525	B	C	5A
C3526	A	C	5A
C3527	B	C	5A
C3901	A	C	6A
C4001	B	C	2C
C4002	B	C	2C
C4003	B	C	2C
C4004	A	C	3C
C4005	A	C	3C
C4006	B	C	2B
C4007	B	C	1B
C4008	B	C	1C
C4009	B	C	2C
C4010	B	C	2D
C4011	B	C	2D
C4012	B	C	2D
C4013	B	C	2D
C4014	B	C	3D
C4015	B	C	3D
C4016	B	C	3D
C4017	B	C	3D
C4018	B	C	4C
C4019	B	C	4C
C4020	B	C	4C
C4021	B	C	3C
C4022	B	C	3B
C4023	B	C	3B
C4024	B	C	3B
C4025	B	C	2B
C4026	B	C	2B
C4028	B	C	2D
C4029	B	C	1D
C4030	B	C	2C
C4034	A	C	2C
C4035	B	C	2B
C4036	B	C	1B
C4037	B	C	2C
C4038	B	C	2D
C4039	B	C	2C
C4040	A	C	2C
C4041	A	C	2C
C4042	A	C	2D
C4043	A	C	2D
C4044	A	C	1C
C4045	A	C	2C
C4046	A	C	1C
C4047	A	C	2C
C4048	A	C	2C
C4049	B	C	3D
C4050	B	C	3C
C4051	A	C	2C
C4055	B	C	2D
C4101	B	C	3A
C4102	B	C	2A
C4201	A	C	5D
C4202	A	C	5D
C4203	B	C	5D
C4204	B	C	6D
C4205	B	C	5D
C4206	B	C	5D
C4207	B	C	5D
C4208	B	C	4E
C4209	B	C	5E
C4210	B	C	4E
C4211	B	C	4E
C4212	B	C	4E
C4213	B	C	5E
C4214	B	C	5D
C4251	A	C	6D
C4252	B	C	6E
C4253	B	C	5E
C4254	B	C	5E
C4255	A	C	5E
C4256	A	C	5D
C4257	B	C	6E
C4501	A	C	6D
C4502	A	C	5D
C4503	A	C	5D
C4504	A	C	5E
C4505	B	C	5D
C4506	B	C	5D
C4507	B	C	5D
C4508	B	C	5D
C4509	B	C	5D
C4510	B	C	5D
C4511	B	C	5D
C4512	B	C	4D
C5203	B	C	2E
C5204	B	C	2D
C5205	B	C	2D
C5206	B	C	2D
C5207	B	C	2D
C5208	B	C	2E
C5209	B	C	2E
C5210	B	C	2E
C5211	B	C	3D
C5212	B	C	2E
C5213	B	C	2E
C5214	B	C	3E
C5215	B	C	3D
C5216	B	C	3D
C5218	B	C	2E
C5219	B	C	2E
C5220	A	C	3E
C5221	A	C	3E
C5222	A	C	2D
C5223	A	C	2D
C5224	A	C	2D
C5225	A	C	2D
C5226	A	C	2E
C5227	A	C	2E
C5228	A	C	2E
C5229	B	C	3D
C5230	B	C	3D
C5231	B	C	3D
C5232	A	C	2E
C5233	A	C	2E
C5234	A	C	2E
C5235	A	C	2E
C5236	A	C	2E
C5237	A	C	2E
C6001	B	C	6E
C6002	B	C	6E
C6003	A	C	6D
C6004	B	C	7C
C6005	B	C	7C
C6006	B	C	7C
C6007	B	C	7C
C6008	B	C	7C
C6009	B	C	7C
C6010	B	C	7C
C6011	B	C	7C
C6012	B	C	7C
C6013	B	C	6C
C6014	B	C	7C
C6015	B	C	7C
C6016	B	C	7C
C6017	B	C	7C
C6018	B	C	7B
C6019	B	C	7B
C6022	B	C	7C
C6111	B	C	6C
C6113	B	C	6C
C6114	B	C	7C
C6121	B	C	6C
C6123	B	C	6C
C6124	B	C	7C
C6125	A	C	5D
C6131	B	C	6C
C6132	B	C	6C
C6133	A	C	7D
C6134	A	C	6D
C6135	A	C	7C
C6141	B	C	6B
C6142	B	C	5B
C6143	B	C	8B
C6151	B	C	6C
C6153	B	C	6C
C6154	B	C	6C
C6155	B	C	6E
C6156	A	C	6D
C6157	B	C	6C
C6161	B	C	6B
C6162	B	C	6B
C6163	B	C	7B
C6164	A	C	6C
C6165	A	C	7C
C6167	B	C	6C
C6168	B	C	6D
C6169	B	C	6D
C6170	A	C	6D
C6171	B	C	6D
C6173	B	C	6C
C6174	A	C	7C
C6175	B	C	6D
C6201	A	C	6D
C7801	A	C	7D
C7802	A	C	7D
C7803	A	C	7E
C7804	A	C	7E
C7805	B	C	7D
C7806	B	C	7D
C7807	B	C	7D
C7809	A	C	7E
C7810	B	C	7D
C7811	B	C	7D
C7812	B	C	7D
C8001	A	C	6A
C8002	B	C	6A
C8003	B	C	7A
C8004	B	C	7A
C8005	B	C	7A
C8006	B	C	7A
C8007	B	C	6A
C8008	B	C	6A
C8009	B	C	6B
C8010	B	C	6B
C8011	B	C	7B
C8012	B	C	7A
C8013	A	C	6A
C8014	A	C	6B
C8015	A	C	7B
C8016	A	C	7B
C8017	A	C	7B
C8018	A	C	7A
C8019	A	C	7A
C8020	A	C	8A
C8021	A	C	8B
C8022	A	C	8B
C8023	A	C	7B
C8024	A	C	6A
C8025	A	C	6A
C8026	A	C	6A
C8027	B	C	6A
C8028	B	C	6A
C8029	B	C	6A
C8030	B	C	6A
C8031	B	C	7A
C8032	B	C	8B
C8033	B	C	8B
C8034	B	C	8B
C8035	B	C	8B
C8036	B	C	7B
C8037	B	C	7B
C8038	B	C	8B
C8039	A	C	7B
C8040	B	C	6A
C8041	A	C	7B
C8042	A	C	7A
C8043	A	C	8A
C8044	A	C	8B

CONNECTOR

REF.No.	LOCATION		
CN1	A	C	4A
CN2	A	C	8A
CN3	A	C	4D
CN4	A	C	2A
CN5	A	C	5A
CN7	A	C	3D
CN8	A	C	4A
CN11	A	C	7D
CN12	B	C	7D
CN13	A	C	8C
CN14	A	C	2A
CN15	A	C	4D
CN16	A	C	7E
CN18	A	C	4E
CN22	A	C	3D
CN25	A	C	3C
CN26	A	C	3C
CN27	B	C	7E

DIODE

REF.No.	LOCATION		
D101	A	C	1A
D102	A	C	1B
D103	A	C	1B
D105	A	C	7A
D106	A	C	7A
D107	A	C	3C
D501	A	C	8B
D502	A	C	8B
D503	A	C	8B
D504	A	C	8B
D505	A	C	8B
D506	A	C	8B
D1601	B	C	8D
D3001	B	C	4B
D3002	B	C	5C
D3101	B	C	1B
D3102	B	C	1C
D3103	B	C	1B
D4001	A	C	2C
D4002	A	C	2C
D5201	B	C	3D
D5202	B	C	3D
D6111	B	C	5C
D6121	B	C	5C
D6131	B	C	6C
D6141	B	C	5C
D6151	B	C	6C
D6152	B	C	6D
D6161	B	C	7B
D6162	B	C	6B
D6163	B	C	6B
D6164	B	C	6D
D6165	A	C	7C

IC

REF.No.	LOCATION		
IC101	A	C	2B
IC102	A	C	2A
IC103	B	C	1A
IC104	B	C	2B
IC105	B	C	3B
IC106	B	C	1A
IC107	A	C	1A
IC1201	B	C	4D
IC1601	B	C	8C
IC1801	A	D	2D
IC2001	B	C	4D
IC2401	A	C	6E
IC3001	A	C	4C
IC3002	A	C	4B
IC3003	B	C	4C
IC3004	B	C	4C
IC3101	B	C	4A
IC3501	B	C	5A
IC3901	A	C	5A
IC4001	B	C	3C
IC4002	A	C	2C
IC4003	A	C	2C
IC4004	A	C	2C
IC4005	A	C	2C
IC4201	B	C	5E
IC4202	B	C	5D
IC4251	B	C	5E
IC4501	B	C	4D
IC5201	B	C	2D
IC5202	A	C	2D
IC6001	B	C	7C
IC7801	A	C	7D
IC7802	A	C	7D
IC7803	B	C	7D
IC8001	B	C	7A
IC8002	A	C	7B
IC8003	A	C	6A
IC8004	A	C	7B
IC8005	B	C	6A
IC8006	B	C	8B
IC8007	B	C	7A

COIL

REF.No.	LOCATION		
L101	A	C	2A
L102	A	C	3D
L103	A	C	3D
L501	B	C	8B
L2001	B	C	4E
L2002	A	C	4A
L2003	A	C	4D
L2051	B	C	1C
L2052	B	C	1C
L2401	A	C	6E
L3002	B	C	5C
L3003	B	C	5C
L3101	B	C	1C
L3104	B	C	3A
L3106	B	C	4A
L3107	B	C	4A
L3501	A	C	5A
L3502	A	C	5A
L3901	A	C	6A
L4001	A	C	2C
L4002	A	C	2C
L4003	A	C	1C
L4004	A	C	2D
L4005	A	C	1C
L4201	A	C	5E
L4501	A	C	6E
L4502	A	C	5E
L4503	A	C	5E
L5201	B	C	3E
L5202	B	C	2E
L5203	A	C	3E
L5204	A	C	2D
L6001	B	C	6D
L6002	B	C	6D
L6004	B	C	6D
L6111	A	C	6C
L6121	A	C	6C
L6131	A	C	6C
L6141	A	C	6B
L6151	A	C	6C
L6161	A	C	6B
L6202	B	C	6D
L7801	A	C	7D
L7803	B	C	7D
L8001	B	C	6A
L8002	A	C	6A
L8003	A	C	6A
L8004	B	C	8B

TRANSISTOR

REF.No.	LOCATION		
Q101	A	C	1B
Q102	A	C	1B
Q103	A	C	3D
Q104	A	C	8A
Q105	A	C	8A
Q106	A	C	8A
Q107	A	C	8A
Q108	B	C	1A
Q109	B	C	1A
Q110	B	C	1A
Q111	A	C	3B
Q2001	A	C	4D
Q2006	B	C	4A
Q2007	B	C	4D
Q2008	B	C	4D
Q2061	B	C	3A
Q2071	B	C	4A
Q2072	B	C	4A
Q2401	B	C	6E
Q3002	B	C	4C
Q3003	B	C	5C
Q3004	B	C	5C
Q3005	B	C	4C
Q3101	B	C	1B

REF.No.	LOCATION		
Q3102	B	C	1B
Q3103	B	C	1C
Q3104	B	C	1C
Q3105	B	C	1B
Q3106	B	C	1B
Q3113	B	C	4A
Q3114	B	C	4A
Q3501	A	C	5A
Q3502	A	C	5A
Q3506	A	C	5A
Q3509	B	C	5A
Q3901	A	C	6A
Q3902	A	C	6A
Q3903	A	C	6A
Q3904	A	C	5A
Q4001	A	C	2D
Q4002	A	C	2D
Q4004	A	C	1C
Q4101	B	C	3A
Q4102	B	C	3A
Q4103	B	C	3A
Q4201	B	C	5D
Q4251	A	D	2D
Q4501	B	C	4D
Q4502	A	C	5E
Q4503	A	C	5E
Q6111	B	C	6C
Q6112	B	C	6C
Q6121	B	C	6C
Q6122	B	C	6C
Q6123	B	C	6D
Q6124	B	C	5D
Q6131	B	C	6C
Q6141	B	C	6C
Q6151	B	C	6C
Q6161	B	C	6C
Q6162	A	C	6C
Q6163	A	C	7C
Q6164	A	C	7C
Q6165	B	C	6D
Q6166	B	C	6D
Q6167	B	C	6D
Q6168	A	C	7D
Q6201	B	C	6E
Q6202	B	C	6E
Q6203	B	C	6E

RESISTOR

R101	B	C	1A
R102	B	C	1A
R103	A	C	1A
R104	A	C	1A
R105	A	C	1B
R106	A	C	1B
R107	A	C	1B
R108	A	C	1B
R109	A	C	1B
R110	A	C	3D
R111	A	C	3D
R112	A	C	3D
R113	A	C	8A
R114	A	C	8A
R115	A	C	8A
R116	A	C	8A
R117	B	C	1A
R118	A	C	7A
R119	A	C	7A
R120	A	C	7A
R121	A	C	7A
R122	A	C	2A
R123	B	C	2A
R124	B	C	2B
R125	A	C	1B
R126	A	C	1B
R127	A	C	2B
R128	B	C	2B
R129	B	C	2B
R130	A	C	6B
R131	A	C	6B
R132	B	C	2B
R133	B	C	2B
R134	A	C	4E
R135	B	C	2B
R136	A	C	4E
R137	A	C	2B

REF.No.	LOCATION		
R138	A	C	1B
R139	B	C	4C
R140	A	C	1B
R141	A	C	2B
R142	A	C	2A
R143	B	C	2A
R144	B	C	2A
R145	A	C	3C
R146	A	C	1A
R147	A	C	3A
R148	A	C	2C
R150	A	C	4E
R152	A	C	2A
R153	A	C	2A
R154	A	C	3A
R155	A	C	3A
R156	A	C	3A
R157	A	C	3A
R158	A	C	3A
R159	A	C	3A
R160	A	C	3A
R161	A	C	3A
R162	B	C	2A
R163	A	C	3B
R164	A	C	7E
R165	B	C	4C
R166	B	C	6D
R167	A	C	1B
R168	A	C	1B
R169	A	C	1B
R170	A	C	1B
R171	A	C	1B
R501	A	C	8C
R502	A	C	8C
R504	A	C	8B
R505	A	C	8B
R1201	B	C	4C
R1202	B	C	4D
R1203	B	C	4D
R1204	B	C	4D
R1601	A	C	8C
R1602	A	C	8C
R1603	B	C	7C
R1604	B	C	7C
R1605	B	C	7C
R1606	B	C	7C
R1607	B	C	7C
R1608	B	C	7C
R1609	B	C	7C
R1610	B	C	8B
R1611	B	C	7C
R1612	B	C	8C
R1613	B	C	8B
R1614	B	C	8C
R1615	B	C	8C
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R1617	B	C	8C
R1618	A	C	8C
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R1622	A	C	8C
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R1624	B	C	7B
R1625	B	C	8C
R1626	A	C	7C
R1627	A	C	8C
R1628	B	C	8D
R1629	B	C	8D
R1630	B	C	8D
R1631	B	C	8B
R1632	B	C	8C
R1633	B	C	8C
R2001	B	C	3D
R2002	B	C	4D
R2003	B	C	3D
R2004	B	C	4D
R2005	A	C	4D
R2006	A	C	4D
R2011	B	C	4D
R2012	B	C	4D
R2016	B	C	4A
R2021	B	C	4A
R2022	B	C	4A
R2023	B	C	4A

REF.No.	LOCATION		
R2024	B	C	4A
R2025	B	C	4A
R2026	B	C	1C
R2027	B	C	1C
R2029	B	C	3B
R2061	B	C	3A
R2062	B	C	4A
R2063	B	C	4A
R2071	B	C	4A
R2072	B	C	4A
R2073	B	C	4A
R2074	B	C	4A
R2075	B	C	4A
R2076	B	C	4A
R2401	A	C	6E
R2402	A	C	6E
R2403	A	C	6E
R2404	A	C	6E
R3001	B	C	4B
R3002	A	C	4C
R3004	A	C	4C
R3006	A	C	4C
R3007	A	C	4C
R3008	A	C	5C
R3009	A	C	3B
R3010	A	C	3B
R3014	B	C	4C
R3015	B	C	4C
R3016	B	C	4C
R3017	B	C	4C
R3018	A	C	4C
R3021	B	C	4C
R3022	B	C	5C
R3023	B	C	5C
R3024	B	C	5C
R3025	B	C	4B
R3026	B	C	4B
R3027	B	C	4B
R3028	A	C	4B
R3029	B	C	4C
R3030	B	C	3C
R3031	B	C	4C
R3032	B	C	5C
R3033	B	C	5C
R3034	A	C	3C
R3035	B	C	4C
R3036	B	C	4C
R3101	B	C	3A
R3102	B	C	3A
R3103	B	C	3A
R3108	B	C	3A
R3109	B	C	1B
R3110	B	C	1B
R3111	B	C	1B
R3112	B	C	1C
R3113	B	C	1C
R3114	B	C	1C
R3115	B	C	1B
R3116	B	C	1B
R3117	B	C	1B
R3131	B	C	4A
R3132	B	C	4A
R3134	B	C	3E
R3135	B	C	4A
R3136	B	C	4A
R3137	B	C	4A
R3138	B	C	4A
R3501	A	C	5A
R3503	B	C	5A
R3504	A	C	5A
R3506	A	C	5A
R3508	B	C	5A
R3509	A	C	5A
R3515	A	C	5A
R3519	B	C	5A
R3520	B	C	5A
R3536	A	C	5A
R3537	A	C	5A
R3538	A	C	5A
R3539	A	C	5A
R3540	B	C	5A
R3901	A	C	5A
R3902	A	C	6A
R4001	B	C	2C
R4002	B	C	1C

REF.No.	LOCATION		
R4003	B	C	2C
R4004	B	C	2C
R4006	B	C	2C
R4007	B	C	2C
R4008	B	C	1D
R4009	B	C	2D
R4010	B	C	2C
R4011	B	C	1D
R4012	B	C	1D
R4013	B	C	2D
R4014	B	C	2D
R4015	A	C	2D
R4016	A	C	2D
R4017	A	C	2D
R4018	A	C	2D
R4019	A	C	2D
R4020	A	C	2D
R4021	A	C	2D
R4022	A	C	2D
R4023	A	C	2D
R4024	A	C	2D
R4025	A	C	2C
R4026	A	C	2C
R4027	A	C	1C
R4029	A	C	1C
R4035	B	C	2B
R4036	B	C	2B
R4037	B	C	2B
R4038	B	C	3B
R4101	B	C	3A
R4102	B	C	3A
R4103	B	C	3A
R4104	B	C	3A
R4105	B	C	3A
R4106	B	C	2A
R4107	B	C	2A
R4108	B	C	2A
R4109	B	C	3A
R4110	B	C	3A
R4111	B	C	3A
R4201	B	C	5D
R4202	B	C	5D
R4203	B	C	6D
R4204	B	C	5D
R4205	B	C	5D
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R4501	B	C	5D
R4502	B	C	5D
R4503	B	C	4D
R4504	B	C	4D
R4505	B	C	5D
R4506	B	C	4D
R4507	B	C	4D
R4513	B	C	4D
R4514	B	C	5D
R4515	B	C	5D
R4516	A	C	5E

REF.No.	LOCATION		
R4518	A	C	5E
R4519	A	C	5E
R4520	A	C	5E
R5201	B	C	2E
R5202	B	C	2E
R5211	B	C	3D
R5212	A	C	2D
R5213	A	C	2D
R5214	A	C	2D
R5215	A	C	2D
R5216	A	C	2D
R5217	B	C	3D
R5218	A	C	2D
R5220	A	C	2D
R6001	B	C	7C
R6002	B	C	7C
R6009	B	C	7C
R6010	B	C	7C
R6011	B	C	7C
R6012	B	C	7C
R6111	B	C	6C
R6112	B	C	6C
R6113	B	C	6C
R6114	B	C	6C
R6115	B	C	6C
R6121	B	C	6C
R6122	B	C	6C
R6123	B	C	6C
R6124	B	C	6C
R6125	B	C	5D
R6126	B	C	5D
R6127	B	C	5D
R6128	B	C	5D
R6129	B	C	6C
R6131	A	C	6C
R6132	A	C	6C
R6133	B	C	7C
R6134	B	C	7C
R6135	A	C	7C
R6136	A	C	7D
R6137	B	C	6C
R6138	B	C	6C
R6141	B	C	6B
R6142	B	C	7C
R6143	B	C	6C
R6144	B	C	6B
R6145	B	C	7B
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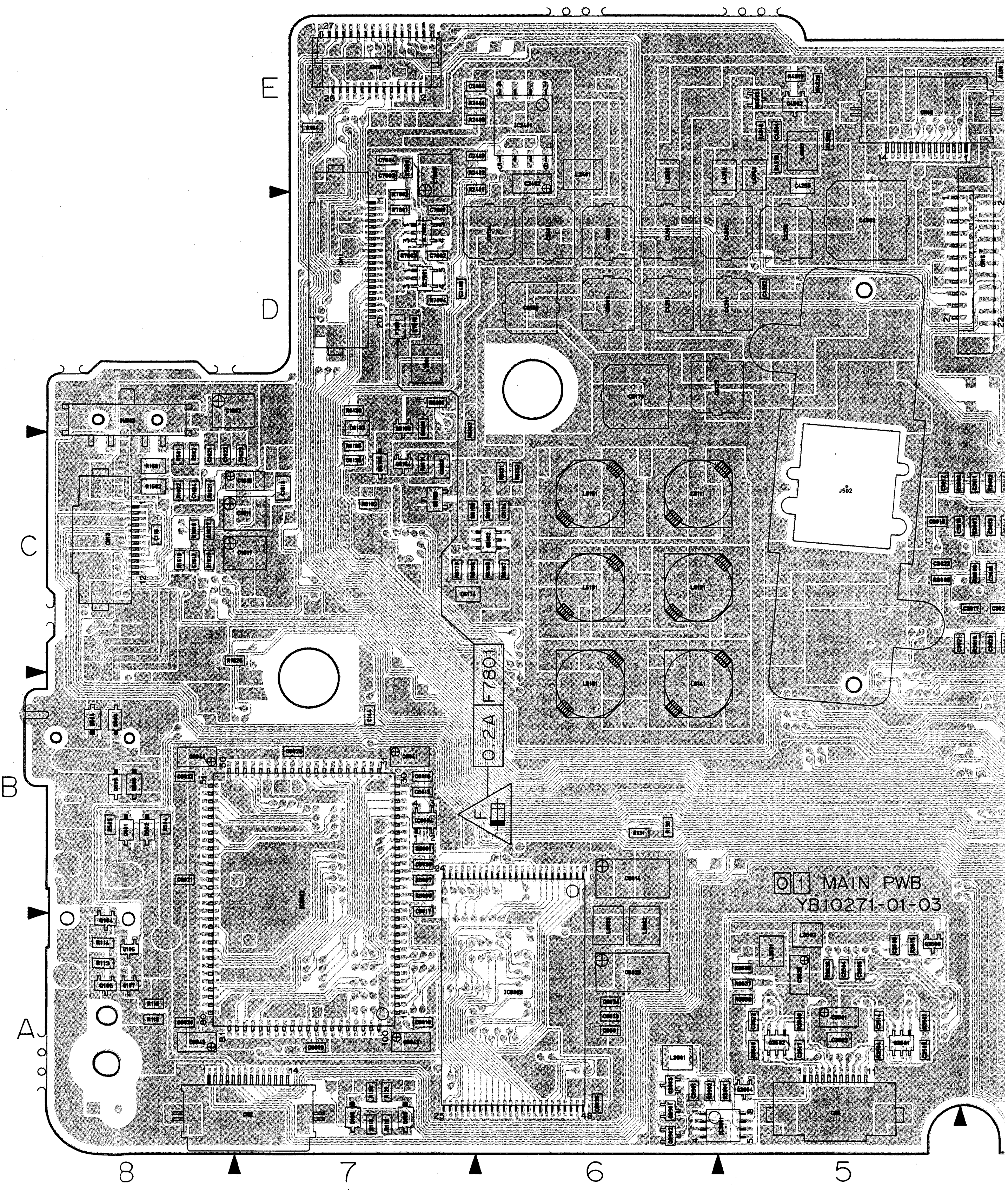
R6151	B	C	7C
R6152	B	C	6C
R6153	B	C	6C
R6154	B	C	7C
R6161	B	C	6B
R6162	B	C	7B
R6163	B	C	7C
R6164	B	C	7B
R6165	A	C	6C
R6166	A	C	6C
R6167	A	C	6C
R6168	A	C	6C
R6169	A	C	6C
R6170	A	C	7C
R6171	A	C	7C
R6172	B	C	6D
R6173	B	C	6D
R6174	B	C	6D
R6175	B	C	6D
R6176	B	C	6D
R6177	B	C	6D
R6178	B	C	6D
R6179	B	C	7C
R6180	A	C	7D
R6181	A	C	7D
R6182	A	C	7C
R6183	A	C	7D
R6201	B	C	6E
R6202	B	C	6E
R6203	B	C	6E
R6204	B	C	6E
R6205	B	C	6E
R6206	B	C	6E
R6902	B	C	6D
R6903	B	C	7B
R6907	B	C	7C
R6914	B	C	7B

REF.No.	LOCATION		
R6931	B	C	6C
R6932	B	C	6C
R7801	A	C	7D
R7802	A	C	7D
R7803	A	C	7D
R7804	A	C	7D
R7808	B	C	7D
R7809	A	C	7E
R7810	A	C	7D
R8001	A	C	7B
R8002	B	C	7A
R8003	B	C	7A
R8004	B	C	7B
R8005	B	C	7B
R8006	A	C	7B
R8007	A	C	7B
R8008	B	C	6A
R8009	B	C	6A
R8010	B	C	6A
R8011	B	C	6A
R8012	B	C	6B
R8013	B	C	6A
R8014	B	C	6A
R8015	B	C	6B
R8016	B	C	6B
R8017	B	C	6B
R8018	B	C	6B
R8019	B	C	6B
R8020	B	C	6B
R8021	B	C	6B
R8022	B	C	6A
R8023	B	C	6A
R8024	B	C	6A
R8025	B	C	6A
R8026	B	C	6A
R8027	B	C	8A
R8028	B	C	6A
RA101	A	C	2A
RA102	A	C	2B
RA103	B	C	2B
RA104	B	C	2B
RA105	B	C	2B
RA106	A	C	3B
RA107	A	C	3A
RA108	A	C	3A
RA109	A	C	3A

OTHER

F6001	B	C	5D
F6003	B	C	6D
F6004	B	C	6D
F7801	A	C	7D
FL4101	B	C	3A
FL4102	B	C	3A
J501	A	D	8B
J502	A	D	5C
J503	A	D	8A
J504	A	D	1C
J505	A	D	1B
SW503	A	C	8D
TP101	A	C	2C
TP102	B	C	2B
TP103	A	C	2A
X101	B	C	2A
X102	A	C	1A
X3001	A	D	4B
X8001	B	C	8A

COMPONENT SIDE (A)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CN4
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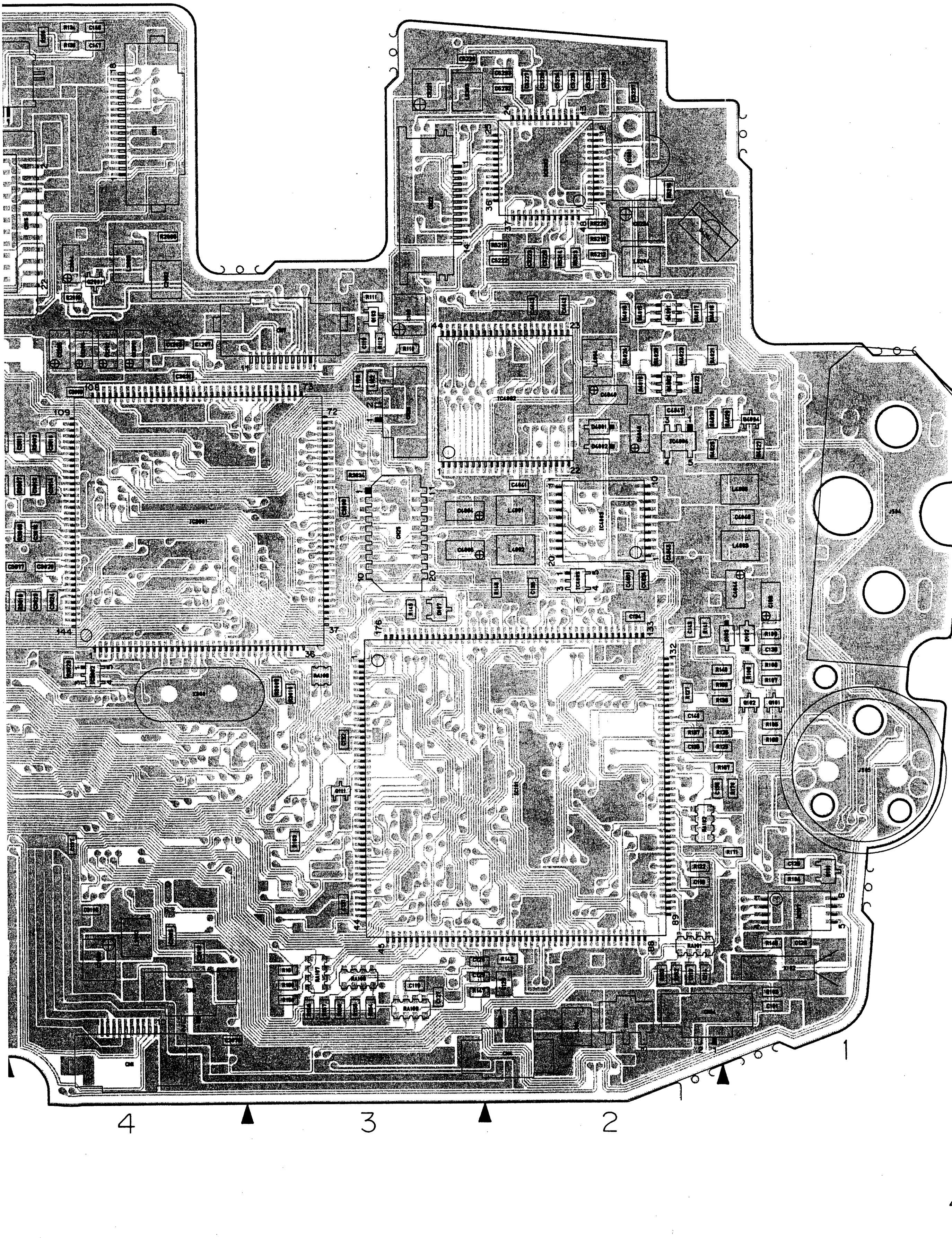
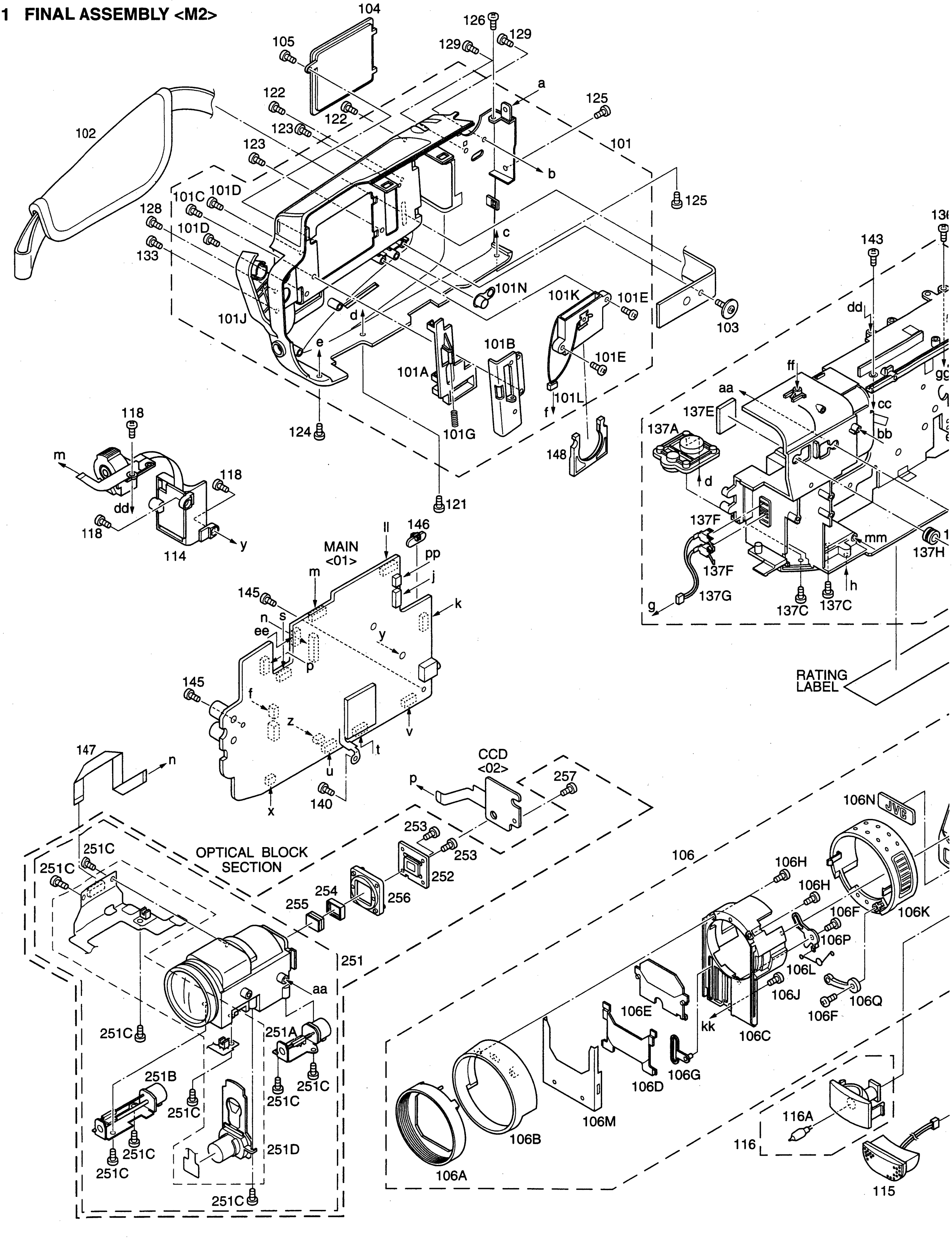


SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 FINAL ASSEMBLY <M2>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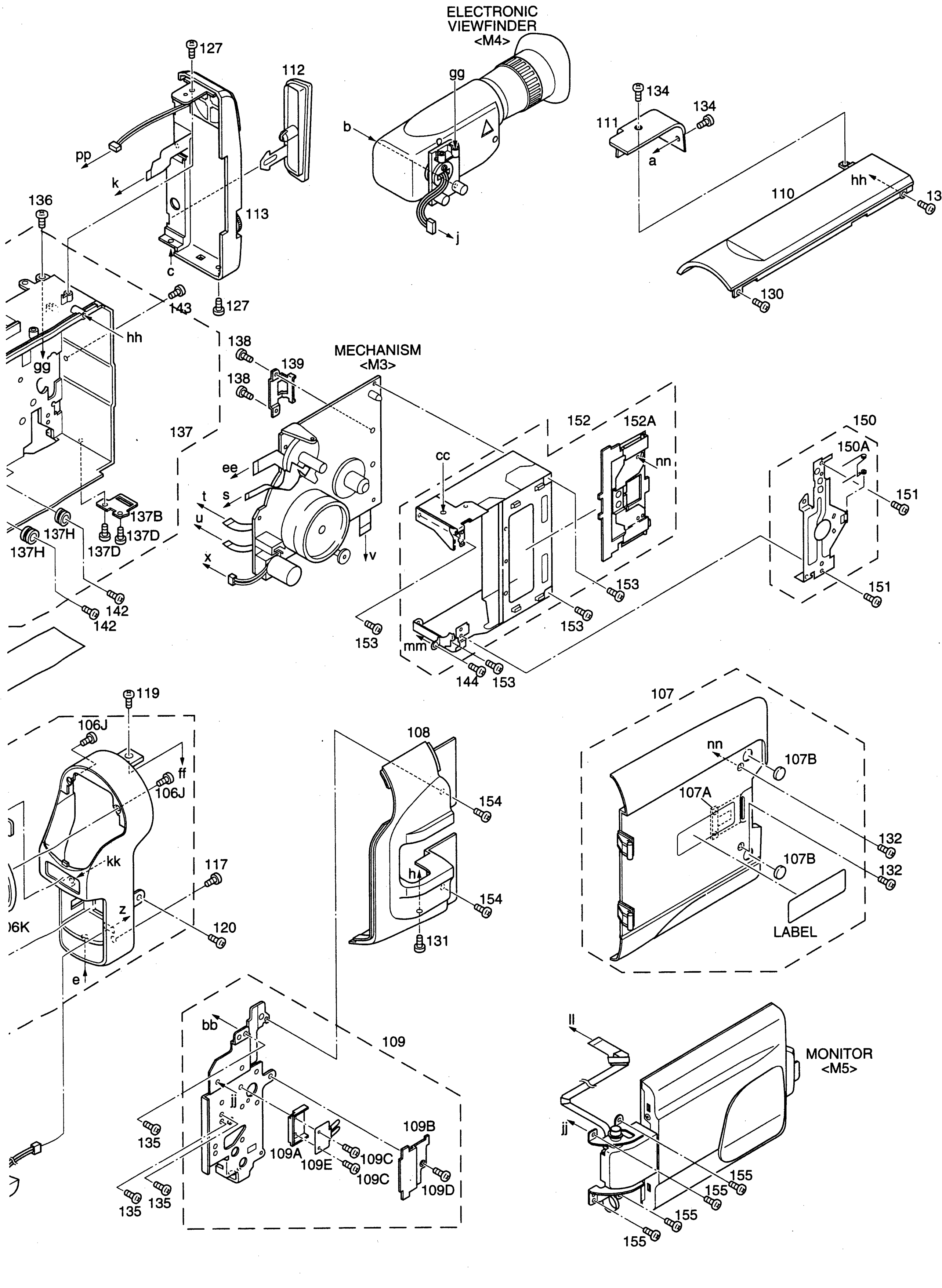
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FINAL ASSEMBLY <M2>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
⚠	101	LY10122-047A	LOWER CASE ASSY
	101A	LY30885-001C	KNOB(B.RELEASE)
	101B	LY30886-001B	BKT(B.RELEASE)
	101C	QYSLSP2030D	SCREW
	101D	QYSLSP2050D	SCREW,X2
	101E	QYSLSF2055D	SPECIAL SCREW,X2
	101G	LY30002-026A	COMPRES. SPRING
	101J	LY30891-001B	CAP(RCA JACK)
	101K	LY30888-001B	HOLDER(LITHIUM)
	101L	WJM0119-001A	E-SI C WIRE C-F
	101N	LY40081-001A	CAP
	102	LY20014-001A	GRIP BELT
	103	LY30018-003A	SPECIAL SCREW
⚠	104	LY30887-001B	CAP(JIG)
	105	QYSLSP2030D	SCREW
	106	LY10124-059A	FRONT COVER ASSY
	106A	LY30893-001C	HOOD
	106B	LY31556-001A	COVER(HOOD)
	106C	LY20349-001C	GUIDE(SHUTTER)
	106D	LY30895-001B	SHUTTER(1)
	106E	LY30896-001A	SHUTTER(2)
	106F	YQ43762	SPECIAL SCREW,X2
	106G	LY41075-001A	SLIDER(SHUTTER)ASSY
	106H	QYSLSF2050Z	SCREW,X2
	106J	QYSLSF2060Z	SCREW,X3
	106K	LY20348-001A	DIAL(SHUTTER)
	106L	LY41081-001D	TORSION SPRING
	106M	LY41128-001B	HOLD(SHUTTER)
	106N	LY41381-001A	MARK
	106P	LY41077-001A	LEVER(1)
	106Q	LY41078-001A	LEVER(2)
	107	LY10131-019A	CASS.COVER(M)ASSY
	107A	LY30907-001A	BUTTON(PUSH)
	107B	LY40076-002A	SPACER,X2
	108	LY10133-001C	UPPER CASE(M)
	109	LY30908-001D	BKT(UPPER)ASSY
	109A	LY30909-001A	BKT(STOPPER)
	109B	LY30910-001C	COVER(STOPPER)
	109C	QYSLSP2030D	SCREW,X2
	109D	QYSLSP2025D	SCREW
	109E	LY41384-001A	EARTH PLATE(B)
	110	LY10129-0A1A	TOP COVER
	111	LY20328-001E	COVER(VF)
	112	LY30892-001B	CAP(REAR JACK)
	113	LY10120-035B	OPERATION UNIT
	114	LY10121-001D	ZOOM UNIT
	115	LY30861-010A	MICROPHONE
	116	LY30860-001B	DC LIGHT ASSY
	116A	YQ44266	LAMP
	117	QYSLSF2055D	SPECIAL SCREW
	118	QYSLSF2055D	SPECIAL SCREW,X3
	119	YQ43762-5	SPECIAL SCREW
	120	QYSLSF2055D	SPECIAL SCREW
	121	QYSLSF2055D	SPECIAL SCREW
	122	QYSLSF2055D	SPECIAL SCREW,X2
	123	QYSLSF2055D	SPECIAL SCREW,X2
	124	QYSLSF2090D	SCREW
	125	QYSLSF2055D	SPECIAL SCREW,X2
	126	QYSLSF2055D	SPECIAL SCREW
	127	QYSLSF2055D	SPECIAL SCREW,X2
	128	QYSLSF2090D	SCREW
	129	QYSLSF2055D	SPECIAL SCREW,X2
	130	QYSLSF2055D	SPECIAL SCREW,X2
	131	QYSLSF2055D	SPECIAL SCREW
	132	QYSLSP2030D	SCREW,X2
	133	QYSLSF2090D	SCREW
	134	QYSLSF2055D	SPECIAL SCREW,X2
	135	QYSLSF2055D	SPECIAL SCREW,X3
	136	QYSLSF2055D	SPECIAL SCREW
⚠	137	LY20372-004A	FRAME ASSY
	137A	LY30903-001A	BASE
	137B	LY41090-001B	HOOK
	137C	QYSLSF2060D	SCREW,X2
	137D	QYSLSF2060Z	SCREW,X2
	137E	LY30016-0H2A	SPACER-A
	137F	YQ43810	CONTACT(LIGHT),X2
	137G	WJM0118-001A	E-SI C WIRE C-F
	137H	LY41082-001A	CUSHION(OP),X2
	138	YQ44457-3	SCREW,X2
	139	LY30904-001A	BKT(MECHA)
	140	QYSPSTU1725M	SCREW
	142	LY30018-050A	SPECIAL SCREW,X2
	143	LY41173-001A	SPECIAL SCREW,X2
	144	QYSLSF1750D	SCREW
	145	QYSLSF2055D	SPECIAL SCREW,X2
	146	LY41083-001B	KNOB(LIGHT)
	147	WJT0024-001A	E-CARD WIRE,OP-MAIN CN15
	148	LY30889-001B	CAP(LITHIUM)
	150	LY30514-001F	FRONT FRAME ASSY
	150A	YQ44144-1-1	TAPE GUIDE
	151	SPSH1725M	SCREW,X2
	152	YQ31752H-31	CASSETTE HOUSING ASSY
	152A	LY30175-001C	CASSETTE COVER INSIDEASSY
	153	YQ44457-3	SCREW,X4
	154	QYSLSP2025D	SCREW,X2
	155	QYSLSP2030D	SCREW,X4

– OPTICAL BLOCK SECTION –

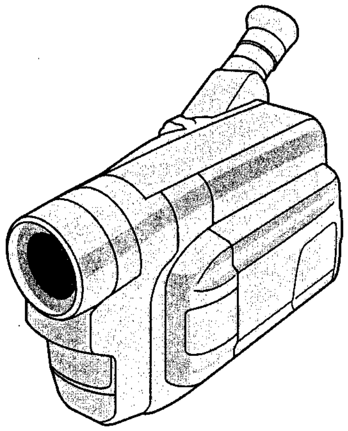
# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	251	LY30948-003A	OP BLOCK ASSY
	251A	PTY30948-002	FOCUS MOTOR
	251B	PTY30948-301	ZOOM MOTOR
	251C	PTY30151-016	SCREW,X9
	251D	PTY30948-006	IRIS MOTOR UNIT,INCL.FPC
	252	LYH40047-001A	CCD BASE ASSY
	253	QYSPSGU2080Z	SCREW,X2
	254	LY31441-001A	SPACER RUBBER
	255	LY41755-001A	OPTICAL LPF
	256	LY20346-001A	CCD SPACER
	257	LY30018-072A	SPECIAL SCREW

JVC

SERVICE MANUAL

COMPACT VHS CAMCORDER

GR-AXM220U



Compact VHS

VHSC

SPECIFICATIONS

Camcorder

General

Format	: VHS NTSC standard
Power source	: DC 6.0 V ⎓
Power consumption	
LCD monitor off, viewfinder on	: 4.2 W
LCD monitor on, viewfinder off	: 4.6 W
LCD monitor on, viewfinder on	: 5.2 W
Signal system	: NTSC-type
Video recording system	
Luminance	: FM recording
Color	: Converted sub-carrier direct recording Conforms to VHS standard
Cassette	: VHSC cassette
Tape speed	
SP	: 33.35 mm/sec. (1-5/16 ips)
EP	: 11.12 mm/sec. (7/16 ips)
Recording time (max.)	
SP	: 40 minutes
EP	: 120 minutes (with TC-40)
Operating temperature	: 0°C to 40°C (32°F to 104°F)
Operating humidity	: 35% to 80%
Storage temperature	: –20°C to 50°C (–4°F to 122°F)
Weight	: Approx. 880 g (2.0 lbs)
Dimensions	: 198 (W) x 119 (H) x 99 (D) mm (7-13/16" x 4-11/16" x 3-15/16") (with the LCD monitor closed and with the viewfinder fully tilted downward)
Pickup	: 1/4" format CCD
Lens	: F1.6, f = 3.9 to 62.4 mm, 16:1 power zoom lens with auto iris and macro control, filter diameter 40.5 mm
Viewfinder	: Electronic viewfinder with 0.5" black/white CRT
White balance adjustment	: Auto/Manual adjustment
LCD monitor	: 2.5" diagonally measured, LCD panel/TFT active matrix system
Speaker	: Monaural

Connectors

JLIP	: ø3.5 mm, 4-pole, mini-head jack (compatible with RC-5325 plug)
Video	: 1 Vp-p, 75 Ω unbalanced, analog output (via Video output connector)
Audio	: –8 dBs, 1 kΩ analog output (via Audio output connector)

AC Power Adapter/Charger AA-V16U

Power requirement	
U.S.A. and Canada	: AC 120 V∿, 60 Hz
Other countries	: AC 110 V to 240 V∿, 50/60 Hz
Power consumption	: 23 W
Output	
Charge	: DC 8.5 V ⎓, 1.3 A
VTR	: DC 6.3 V ⎓, 1.8 A
Charging system	: Constant current, peak detection, timer controlled
Dimensions	: 125 (W) x 42 (H) x 68 (D) mm (4-15/16" x 1-11/16" x 2-11/16")
Weight	: Approx. 270 g (0.6 lbs)

Cassette Adapter C-P7U

Dimensions	: 188 (W) x 25 (H) x 104 (D) mm (7-7/16" x 1" x 4-1/8")
Weight	: Approx. 240 g (0.53 lbs)
Accessory	: "AA (R6)"-size battery x 1

Optional Accessories

- **Battery Packs BN-V12U, BN-V20U, BN-V856U**
- **Car Battery Charger BH-V3U**
- **Battery Charger BH-VC10U**
- **Audio/Video Cable**
- **Car Battery Cord AP-V7U**
- **Compact VHS (VHSC) Cassettes TC-40/30/20**
- **Active Carrying Bag CB-V7U**

Some accessories are not available in some areas. Please consult your nearest JVC dealer for details on accessories and their availability.

Specifications shown are for SP mode unless otherwise indicated. E & O.E. Design and specifications subject to change without notice.

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No. 86526
November 1999

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Important Safety Precautions

Prior to shipment from the factory, JVC products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

●Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the ⚠ symbol and shaded (▨) parts are critical for safety.
   Replace only with specified part numbers.
   Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Fuse replacement caution notice.
   Caution for continued protection against fire hazard.
   Replace only with same type and rated fuse(s) as specified.

4. Use specified internal wiring. Note especially:
   1) Wires covered with PVC tubing
   2) Double insulated wires
   3) High voltage leads

5. Use specified insulating materials for hazardous live parts. Note especially:
   1) Insulation Tape
   2) PVC tubing
   3) Spacers
   4) Insulation sheets for transistors
   5) Barrier

6. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering.

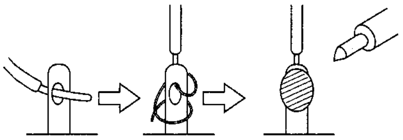


Fig.1

7. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

8. Check that replaced wires do not contact sharp edged or pointed parts.

9. When a power cord has been replaced, check that 10-15 kg of force in any direction will not loosen it.

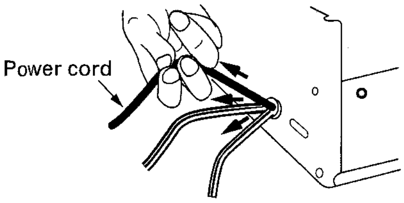


Fig.2

10. Also check areas surrounding repaired locations.

11. Products using cathode ray tubes (CRTs)
    In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the specified parts. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

12. Crimp type wire connector
    In such cases as when replacing the power transformer in sets where the connections between the power cord and power transformer primary lead wires are performed using crimp type connectors, if replacing the connectors is unavoidable, in order to prevent safety hazards, perform carefully and precisely according to the following steps.

    1) **Connector part number :** E03830-001
    2) **Required tool :** Connector crimping tool of the proper type which will not damage insulated parts.
    3) **Replacement procedure**
       (1) Remove the old connector by cutting the wires at a point close to the connector.
       Important : Do not reuse a connector (discard it).

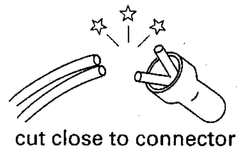


Fig.3

(2) Strip about 15 mm of the insulation from the ends of the wires. If the wires are stranded, twist the strands to avoid frayed conductors.

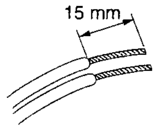


Fig.4

(3) Align the lengths of the wires to be connected. Insert the wires fully into the connector.

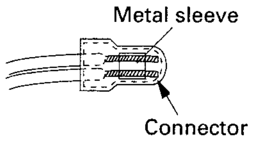


Fig.5

(4) As shown in Fig.6, use the crimping tool to crimp the metal sleeve at the center position. Be sure to crimp fully to the complete closure of the tool.

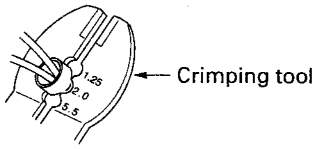


Fig.6

(5) Check the four points noted in Fig.7.

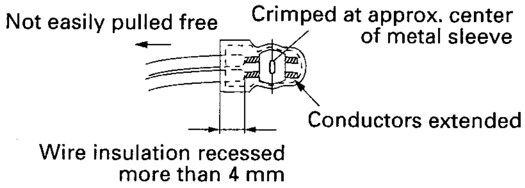

Not easily pulled free
Crimped at approx. center of metal sleeve
Conductors extended
Wire insulation recessed more than 4 mm

Fig.7

• Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions, Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. **Insulation resistance test**
   Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

2. **Dielectric strength test**
   Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table 1 below.

3. **Clearance distance**
   When replacing primary circuit components, confirm specified clearance distance (d), (d') between soldered terminals, and between terminals and surrounding metallic parts. See table 1 below.

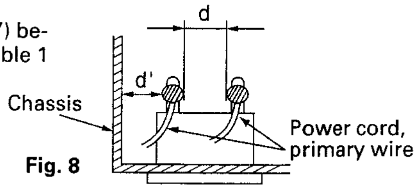


Fig. 8

4. **Leakage current test**
   Confirm specified or lower leakage current between earth ground/power cord plug prongs and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).
   Measuring Method : (Power ON)
   Insert load Z between earth ground/power cord plug prongs and externally exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure 9 and following table 2.

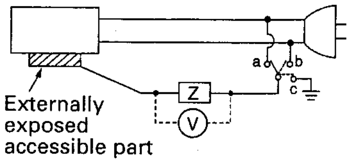


Fig. 9

5. **Grounding (Class Ⅰ model only)**
   Confirm specified or lower grounding impedance between earth pin in AC inlet and externally exposed accessible parts (Video in, Video out, Audio in, Audio out or Fixing screw etc.).
   Measuring Method:
   Connect milli ohm meter between earth pin in AC inlet and exposed accessible parts. See figure 10 and grounding specifications.

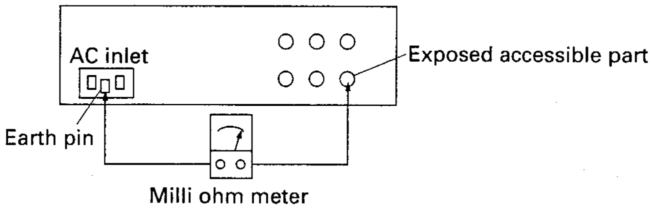


Fig. 10

Grounding Specifications

Region	Grounding Impedance (Z)
USA & Canada	Z ≦ 0.1 ohm
Europe & Australia	Z ≦ 0.5 ohm

AC Line Voltage	Region	Insulation Resistance (R)	Dielectric Strength	Clearance Distance (d), (d')
100 V	Japan	R ≧ 1 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3 mm
100 to 240 V			AC 1.5 kV 1 miute	d, d' ≧ 4 mm
110 to 130 V	USA & Canada	1 MΩ ≦ R ≦ 12 MΩ/500 V DC	AC 1 kV 1 minute	d, d' ≧ 3.2 mm
110 to 130 V 200 to 240 V	Europe & Australia	R ≧ 10 MΩ/500 V DC	AC 3 kV 1 minute (Class Ⅱ) AC 1.5 kV 1 minute (Class Ⅰ)	d ≧ 4 mm d' ≧ 8 mm (Power cord) d' ≧ 6 mm (Primary wire)

Table 1 Specifications for each region

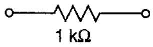
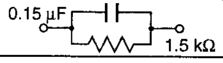
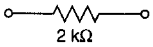
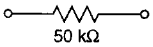
AC Line Voltage	Region	Load Z	Leakage Current (i)	a, b, c
100 V	Japan		i ≦ 1 mA rms	Exposed accessible parts
110 to 130 V	USA & Canada		i ≦ 0.5 mA rms	Exposed accessible parts
110 to 130 V 220 to 240 V	Europe & Australia		i ≦ 0.7 mA peak i ≦ 2 mA dc	Antenna earth terminals
			i ≦ 0.7 mA peak i ≦ 2 mA dc	Other terminals

Table 2 Leakage current specifications for each region

Note: These tables are unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

INSTRUCTIONS

Dear Customer,
Thank you for purchasing the JVC Compact VHS camcorder. Before use, please read the safety information and precautions contained in the following pages to ensure safe use of this product.

Using This Instruction Manual
- All major sections and subsections are listed in the Table Of Contents on the cover.
- Notes appear after most subsections. Be sure to read these as well.
- Basic and advanced features/operation are separated for easier reference.

It is recommended that you . . .

.... refer to the Index (☞ pgs. 36 – 39) and familiarize yourself with button locations, etc. before use.

.... read thoroughly the Safety Precautions and Safety Instructions that follow. They contain extremely important information regarding the safe use of this product.

You are recommended to carefully read the cautions on pages 40 – 41 before use.

SAFETY PRECAUTIONS

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

The AA-V16U AC Power Adapter/Charger should be used with:
AC 120 V∿, 60 Hz in the USA and Canada,
AC 110 – 240 V∿, 50/60 Hz in other countries.

CAUTION (applies to the AA-V16U)
TO PREVENT ELECTRIC SHOCK MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION (s'applique à l'AA-V16U)
POUR ÉVITER LES CHOCS ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU'AU FOND.

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

Warning on lithium battery
(for clock operation)
The battery used in this device may present a fire or chemical burn hazard if mistreated. Do not recharge, disassemble, heat above 100°C (212°F) or incinerate.
Replace the battery with Maxell, Panasonic (Matsushita Electric), Sanyo or Sony CR2025; use of another battery may present a risk of fire or explosion.
- ■ Dispose of used battery promptly.
- ■ Keep away from children.
- ■ Do not disassemble and do not dispose of in fire.

NOTES:
- *The rating plate (serial number plate) and safety caution are on the bottom and/or the back of the main unit.*
- *The rating information and safety caution of the AC Power Adapter/Charger are on its bottom.*

This camcorder is designed to be used with NTSC-type color television signals. It cannot be used for playback with a television of a different standard. However, live recording and LCD monitor/viewfinder playback are possible anywhere. Use the BN-V11U/V12U/V20U battery packs and, to recharge them, the provided multi-voltage AC Power Adapter/Charger. (An appropriate conversion adapter may be necessary to accommodate different designs of AC outlets in different countries.)

ATTENTION:
The product that you have purchased is powered by a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal.

The EPA certified RBRC® Battery Recycling Seal on the nickel-cadmium (Ni-Cd) battery indicates JVC is voluntarily participating in an industry program to collect and recycle these batteries at the end of their useful life, when taken out of service in the United States. The RBRC® program provides a convenient alternative to placing used Ni-Cd batteries into the trash or the municipal waste stream, which may be illegal in your area. Please call 1-800-8-BATTERY™ for information on Ni-Cd battery recycling and disposal bans/restrictions in your area. JVC's involvement in this program is part of our commitment to preserving our environment and conserving our natural resources.

When the equipment is installed in a cabinet or on a shelf, make sure that is has sufficient space on all sides to allow for ventilation (10 cm (3-15/16") or more on both sides, on top and at the rear).

Do not block the ventilation holes.
(If the ventilation holes are blocked by a newspaper, or cloth etc. the heat may not be able to get out.)

No naked flame sources, such as lighted candles, should be placed on the apparatus.

When discarding batteries, environmental problems must be considered and the local rules or laws governing the disposal of these batteries must be followed strictly.

The apparatus shall not be exposed to dripping or splashing.

Do not use this equipment in a bathroom or places with water.
Also do not place any containers filled with water or liquids (such as cosmetics or medicines, flower vases, potted plants, cups etc.) on top of this unit.
(If water or liquid is allowed to enter this equipment, fire or electric shock may be caused.)

IMPORTANT PRODUCT SAFETY INSTRUCTIONS

Electrical energy can perform many useful functions. But improper use can result in potential electrical shock or fire hazards. This product has been engineered and manufactured to assure your personal safety. In order not to defeat the built-in safeguards, observe the following basic rules for its installation, use and servicing.

ATTENTION:

Follow and obey all warnings and instructions marked on your product and its operating instructions. For your safety, please read all the safety and operating instructions before you operate this product and keep this manual for future reference.

INSTALLATION

1. Grounding or Polarization

(A) Your product may be equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature.
If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

(B) Your product may be equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin. This plug will only fit into a grounding-type power outlet. This is a safety feature.
If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.

2. Power Sources

Operate your product only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your home, consult your product dealer or local power company. If your product is intended to operate from battery power, or other sources, refer to the operating instructions.

3. Overloading

Do not overload wall outlets, extension cords, or integral convenience receptacles as this can result in a risk of fire or electric shock.

4. Power Cord Protection

Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the product.

5. Ventilation

Slots and openings in the cabinet are provided for ventilation. To ensure reliable operation of the product and to protect it from overheating, these openings must not be blocked or covered.

- Do not block the openings by placing the product on a bed, sofa, rug or other similar surface.
- Do not place the product in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.

6. Wall or Ceiling Mounting

The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

ANTENNA INSTALLATION INSTRUCTIONS

1. Outdoor Antenna Grounding

If an outside antenna or cable system is connected to the product, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Article 810 of the National Electrical Code, ANSI/NFPA 70, provides information with regard to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.

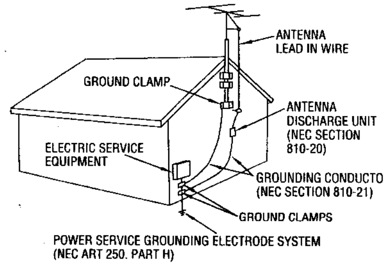
2. Lightning

For added protection for this product during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the product due to lightning and power-line surges.

3. Power Lines

An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits as contact with them might be fatal.

EXAMPLE OF ANTENNA GROUNDING AS PER NATIONAL ELECTRICAL CODE, ANSI/NFPA 70


ANTENNA LEAD IN WIRE
GROUND CLAMP
ANTENNA DISCHARGE UNIT (NEC SECTION 810-20)
ELECTRIC SERVICE EQUIPMENT
GROUNDING CONDUCTORS (NEC SECTION 810-21)
GROUND CLAMPS
POWER SERVICE GROUNDING ELECTRODE SYSTEM (NEC ART 250, PART H)

NEC – NATIONAL ELECTRICAL CODE

USE

1. Accessories

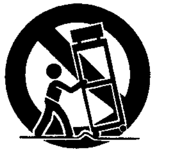
To avoid personal injury:

- Do not place this product on an unstable cart, stand, tripod, bracket or table. It may fall, causing serious injury to a child or adult, and serious damage to the product.
- Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer or sold with the product.
- Use a mounting accessory recommended by the manufacturer and follow the manufacturer's instructions for any mounting of the product.
- Do not try to roll a cart with small casters across thresholds or deep-pile carpets.

2. Product and Cart Combination

A product and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the product and cart combination to overturn.

PORTABLE CART WARNING
(Symbol provided by RETAC)



3. Water and Moisture

Do not use this product near water—for example, near a bath tub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool and the like.

4. Object and Liquid Entry

Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electric shock. Never spill liquid of any kind on the product.

5. Attachments

Do not use attachments not recommended by the manufacturer of this product as they may cause hazards.

6. Cleaning

Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

7. Heat

The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

SERVICING

1. Servicing

If your product is not operating correctly or exhibits a marked change in performance and you are unable to restore normal operation by following the detailed procedure in its operating instructions, do not attempt to service it yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

2. Damage Requiring Service

Unplug this product from the wall outlet and refer servicing to qualified service personnel under the following conditions:

a. When the power supply cord or plug is damaged.
b. If liquid has been spilled, or objects have fallen into the product.
c. If the product has been exposed to rain or water.
d. If the product does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the product to its normal operation.
e. If the product has been dropped or damaged in any way.
f. When the product exhibits a distinct change in performance—this indicates a need for service.

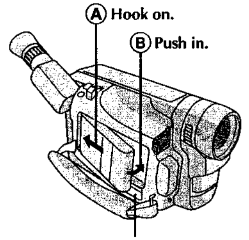
3. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

4. Safety Check

Upon completion of any service or repairs to this product, ask the service technician to perform safety checks to determine that the product is in safe operating condition.

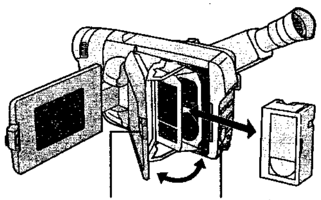
SUPPLY POWER



Using the battery pack
Hook its end to the camcorder Ⓐ and push the battery pack in until it locks in place Ⓑ.
(Charging procedure, ☞ pg. 8)

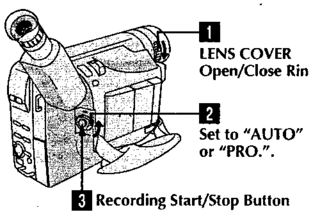
To remove the battery pack
Slide **BATTERY RELEASE** and pull out the battery pack.

INSERTING A VIDEO CASSETTE



1 Open the LCD monitor fully.
2 Slide **EJECT** to open the cassette holder.
3 Insert a video cassette.
4 Press **PUSH** to close the cassette holder.
(For more details, ☞ pg. 10)

SHOOTING


1 LENS COVER Open/Close Ring
2 Set to "AUTO" or "PRO.".
3 Recording Start/Stop Button

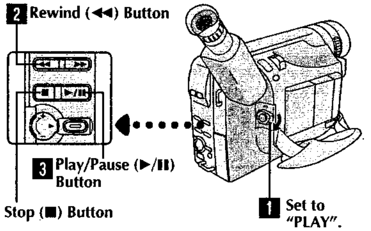
1 Turn the **LENS COVER** Open/Close Ring to open the lens cover.
2 Set the Power Switch to "AUTO" or "PRO.".
— The power lamp will light and an image will appear.
3 Press the Recording Start/Stop Button.
— Recording starts.

- To stop recording temporarily, momentarily press the Recording Start/Stop Button once again.

(For more details, ☞ pgs. 14, 15)

- **The viewfinder switches off automatically to save power when the LCD monitor is opened at an angle of over 60 degrees.**
- **The LCD monitor turns on/off when it is opened/closed at approx. 60 degrees.**

PLAYBACK



1 Set the Power Switch to "PLAY".
2 Press ◀◀.
— The tape will automatically stop at the beginning of the tape.
3 Press ▶/❚❚.
— Playback starts and the playback picture appears.

- To stop playback, press ■.

(For more details, ☞ pg. 28.)

- **The viewfinder switches off automatically to save power when the LCD monitor is opened at an angle of over 60 degrees.**
- **The LCD monitor turns on/off when it is opened/closed at approx. 60 degrees.**

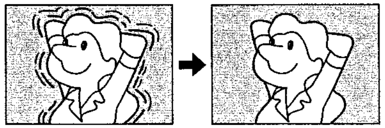
Or simply play back the tape on a VHS VCR using the Cassette Adapter (VHS Playpak).
☞ pg. 32

Program AE with Special Effects (☞ pg. 19)

■ Electronic Fog Filter ■ ND Effect
■ Sepia ■ Twilight ■ Sports ■ Nega/Posi
■ 1/2000 sec. High Speed Shutter

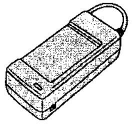
TBC (Time Base Corrector) (☞ pg. 29)

Picture Stabilizer (☞ pg. 16)

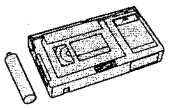


Digital Hyper Zoom (☞ pg. 16)

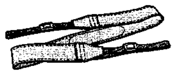
PROVIDED ACCESSORIES



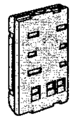
- AC Power Adapter/ Charger AA-V16U



- Cassette Adapter (VHS Playpak) C-P7U

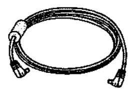


- Shoulder Strap



- Battery Pack BN-V11U

- Lithium Battery CR2025 (for clock operation)

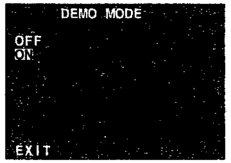


- DC Cord

NOTES about Automatic Demonstration

Automatic Demonstration takes place when "DEMO MODE" is set to "ON" (factory-preset).

- *Available when the Power Switch is set to "AUTO" or "PRO.".*
- *Operating the Power Zoom Lever during the demonstration stops the demonstration temporarily. If the Power Zoom Lever is not moved for more than 1 minute after that, the demonstration will resume.*
- *To cancel Automatic Demonstration, set the Power Switch to "PRO." and press* ***MENU*** *while the demo is in progress. This takes you directly to the demo mode's Setting Menu (so you will not have to go through the main Menu Screen.) Rotate the Select Wheel to select "OFF" and press it. The Menu Screen appears with the highlight bar on "RETURN". Press it to close the Menu Screen.*

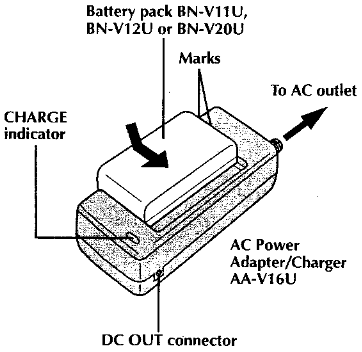


Setting Menu

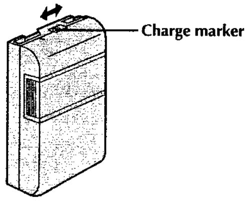
** "DEMO MODE" remains "ON" even if the camcorder power is turned off.*

NOTE:
When a tape whose Erase Protection tab is in the position that allows recording is loaded in the camcorder, demonstration is not available.

Cassettes marked VHS C can be used with this camcorder.


Battery pack BN-V11U, BN-V12U or BN-V20U
Marks
To AC outlet
CHARGE indicator
AC Power Adapter/Charger AA-V16U
DC OUT connector

Battery pack	Charging time
BN-V11U	approx. 1 hr. 10 min.
BN-V12U (optional)	approx. 1 hr. 10 min.
BN-V20U (optional)	approx. 1 hr. 50 min.



ATTENTION:

Charging a battery with some charge remaining reduces that battery's capacity. Perform the procedure below to fully discharge the battery pack before recharging.

1. Attach the battery pack to the camcorder and make sure a cassette is ***not*** inserted, then set the Power Switch to "AUTO" or "PRO.".
2. The camcorder power turns off automatically when discharging is complete.

When you are not using a battery pack for a long period of time, be sure to fully discharge it before storing because leaving a battery with some charge left over also reduces performance.

Power

This camcorder's 3-way power supply system lets you choose the most appropriate source of power. Do not use provided power supply units with other equipment.

CHARGING THE BATTERY PACK

1 Make sure you unplug the camcorder's DC cord from the AC Power Adapter/Charger. Plug the AC Adapter/Charger's power cord into an AC outlet.

2 Align the marks and slide the battery pack in the direction of the arrow until it locks in place. The CHARGE indicator begins blinking to indicate charging has started.

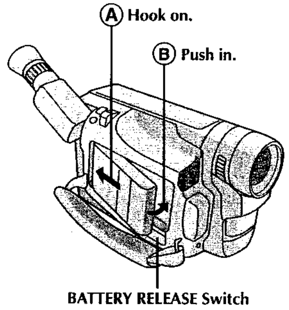
3 When the CHARGE indicator stops blinking but stays lit, charging is finished. Slide the battery in the opposite direction of the arrow and lift off. Remember to unplug the AC Adapter/Charger's power cord from the AC outlet.

Charge Marker

A charge marker is provided on the battery pack to help you remember whether it has been charged or not. Two colors are provided (red and black)—you choose which one means charged and which means discharged.

NOTES:

- *Perform charging where the temperature is between 10° and 35°C (50°F and 95°F). 20° to 25°C (68°F to 77°F) is the ideal temperature range for charging. If the environment is too cold, charging may be incomplete.*
- *Charging times noted above are for a fully discharged battery pack.*
- *Charging time varies according to the ambient temperature and the status of the battery pack.*
- *To avoid interference with reception, do not use the AC Power Adapter/Charger near a radio.*
- *If you connect the camcorder's DC cord to the adapter during battery charging, power is supplied to the camcorder and charging stops.*
- *Since the AC Power Adapter/Charger processes electricity internally, it becomes warm during use. Be sure to use it only in well-ventilated areas.*
- *When charging the battery pack for the first time or after a long storage period, the CHARGE indicator may not light. In this case, remove the battery pack from the AC Power Adapter/Charger, then try charging again.*
- *If the battery operation time remains extremely short even after having been fully charged, the battery is worn out and needs to be replaced. Please purchase a new one.*
- *Remember to set the charge marker after charging a battery pack or after detaching a discharged one from your camcorder.*



ATTENTION:

Before detaching the power source, make sure that the camcorder's power is turned off. Failure to do so can result in a camcorder malfunction.

USING THE BATTERY PACK

Hook its end to the camcorder Ⓐ and push the battery pack in until it locks in place Ⓑ.

- If the battery pack is attached in the wrong position, a malfunction may occur.

To Detach The Battery Pack . . .

.... slide **BATTERY RELEASE** and pull out the battery pack.

Approximate recording time

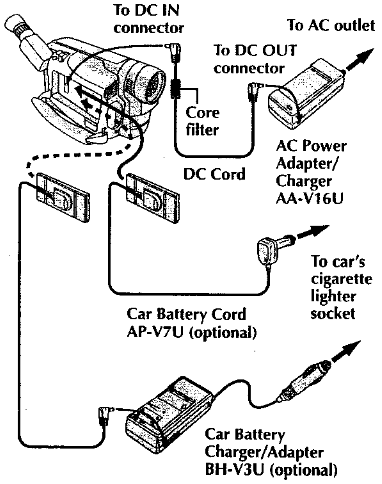
Battery pack	LCD monitor off/ Viewfinder on	LCD monitor on/ Viewfinder off	LCD monitor on/ Viewfinder on
BN-V11U	1 hr. 30 min.	1 hr. 20 min.	1 hr. 10 min.
BN-V12U (optional)	1 hr. 30 min.	1 hr. 20 min.	1 hr. 10 min.
BN-V20U (optional)	2 hrs. 20 min.	2 hrs. 10 min.	1 hr. 55 min.
BN-V856U (optional)	9 hrs. 30 min.	8 hrs. 40 min.	7 hrs. 40 min.

NOTES:

- *Recording time is reduced significantly under the following conditions:*
  - *Zoom or Record-Standby mode is engaged repeatedly.*
  - *The LCD monitor is used repeatedly.*
- *Before extended use, it is recommended that you prepare enough battery packs to cover 3 times the planned shooting time.*

INFORMATION:

VU-V856KIT is a set composed of the BN-V856U battery pack and AA-V80U AC Power Adapter/Charger. Read the VU-V856KIT's instruction manuals before using.
It is impossible to charge the BN-V856U battery pack using the provided AC Power Adapter/Charger. Use the optional AA-V80U AC Power Adapter/Charger.


To DC IN connector
To AC outlet
To DC OUT connector
Core filter
DC Cord
AC Power Adapter/ Charger AA-V16U
To car's cigarette lighter socket
Car Battery Cord AP-V7U (optional)
Car Battery Charger/Adapter BH-V3U (optional)

USING AC POWER

Use the AC Power Adapter/Charger (connect as shown in the illustration).

NOTES:

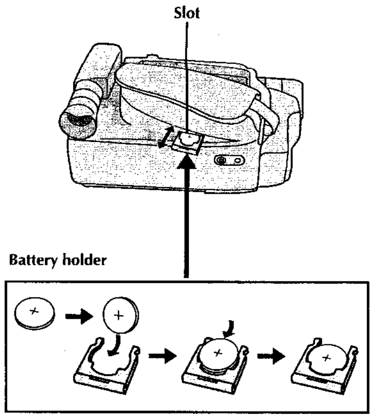
- *The provided AC Power Adapter/Charger features automatic voltage selection in the AC range from 110 V to 240 V.*
- *For other notes, ☞ pg. 8.*

USING A CAR BATTERY

Use the optional Car Battery Cord or Car Battery Charger/Adapter (connect as shown in the illustration).

NOTES:

- *When using the car battery, leave the engine idling.*
- *The optional Car Battery Charger (BH-V3U) can also be used to charge the battery pack (except BN-V20U/V856U).*
- *When using the optional Car Battery Charger or Car Battery Cord (AP-V7U), refer to the respective instruction booklet.*



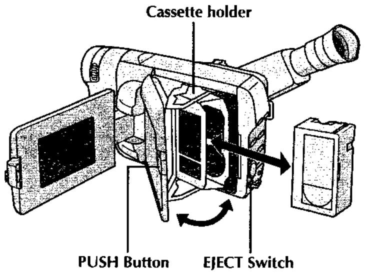
Clock (Lithium) Battery Insertion/Removal

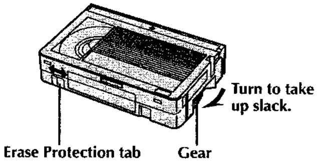
This battery is necessary for clock operation and to perform date/time settings.

1. Switch off the unit's power and remove the power supply unit (battery pack, AC Power Adapter/Battery Charger, etc.).
2. Pull out the battery holder to remove it from the camcorder.
3. Insert the battery in the holder, and be sure to have the "+" mark visible.
4. Slide the holder back into the slot until you hear a click.

NOTES:

- *See "SAFETY PRECAUTIONS" (☞ pg. 2) for information on safe handling of lithium batteries.*
- *To avoid losing the battery and/or battery holder, place the camcorder with the grip side up as shown in the illustration when inserting/removing the battery.*



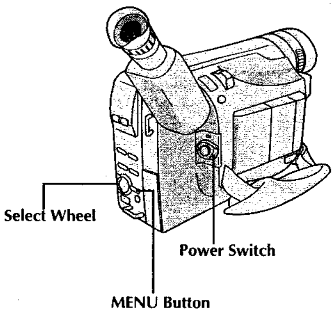


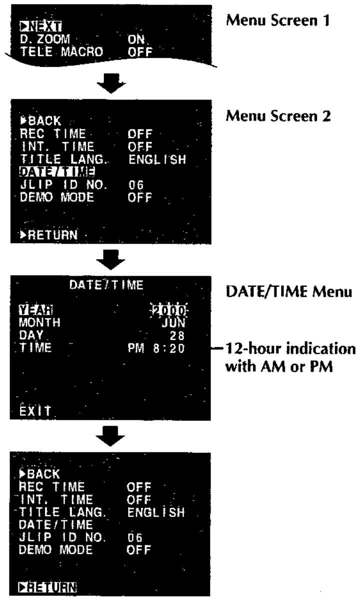
Loading/Unloading A Cassette

1. Open the LCD monitor fully.
2. Slide **EJECT** until the cassette holder opens. Do not use force to open.
3. Insert or remove a cassette. When inserting, make sure the label is facing outward.
4. Press **PUSH** to close the cassette holder until it locks into place. Close the LCD monitor.

NOTES:

- *Closing the LCD monitor while the cassette holder is still open may cause damage to the LCD monitor.*
- *The cassette holder can't be opened unless a power supply is attached.*
- *Make sure that the tape is not slack when loading the cassette. If there is any slack, turn the gear on the cassette in the direction of the arrow to take up the slack.*
- *Make sure the Erase Protection tab is in the position that allows recording. If not, slide the tab. Some cassettes have removable tabs. If the tab has been removed, cover the hole with adhesive tape.*
- *The cassette holder cannot be opened while the camcorder is in the record mode.*





Menu Screen 1

```
▶NEXT
D. ZOOM        ON
TELE MACRO     OFF
```

Menu Screen 2

```
▶BACK
REC TIME       OFF
INT. TIME      OFF
TITLE LANG.    ENGLISH
DATE/TIME
JLIP ID NO.    06
DEMO MODE      OFF

▶RETURN
```

DATE/TIME Menu

```
      DATE/TIME
YEAR               2000
MONTH               JUN
DAY                  28
TIME          PM 8:20

EXIT
```

12-hour indication with AM or PM

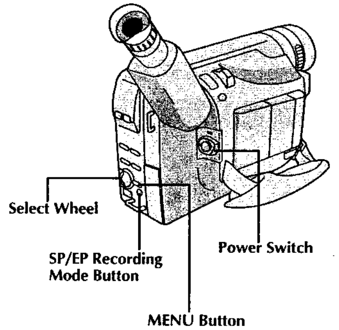
```
▶BACK
REC TIME       OFF
INT. TIME      OFF
TITLE LANG.    ENGLISH
DATE/TIME
JLIP ID NO.    06
DEMO MODE      OFF

▶RETURN
```

Date/Time Settings

1. Set the Power Switch to "PRO.". The power lamp comes on.
2. Press **MENU**. The Menu Screen appears.
3. Rotate the Select Wheel to move the highlight bar to "NEXT" in Menu Screen 1 and press it to display Menu Screen 2. Then, rotate it to move the highlight bar to "DATE/TIME" and press it. The DATE/TIME Menu appears.
   - To return to the previous settings, rotate the Select Wheel to move the highlight bar to "EXIT" and press it, then go to step **7**.
   - To set only the time without changing the date, go to step **5**.
4. To set "YEAR", "MONTH" or "DAY", rotate the Select Wheel to move the highlight bar to the desired item, and press it. When the setting begins blinking, rotate the Select Wheel until the correct setting appears and then press it. The setting stops blinking.
   Repeat for other date settings.
5. Rotate the Select Wheel to move the highlight bar to "TIME" and then press it. When the hour setting begins blinking, rotate the Select Wheel until the correct setting appears and then press it. When the hour setting stops blinking and the minute setting begins blinking, rotate the Select Wheel until the correct setting appears and then press it. The minute setting stops blinking.
6. When none of these settings ("YEAR", "MONTH", "DAY", "TIME") blinks, rotate the Select Wheel to move the highlight bar to "EXIT", and press it. The Menu Screen reappears with the highlight bar on "RETURN".
7. Press the Select Wheel to close the Menu Screen.

NOTE:

To display the date and time in the camcorder's display and on a connected TV, see "Date/Time Insert" (☞ pg. 23).


Select Wheel
SP/EP Recording Mode Button
Power Switch
MENU Button

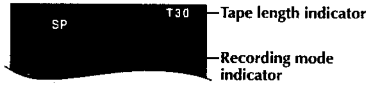
Recording Mode Setting

Set depending on your preference.

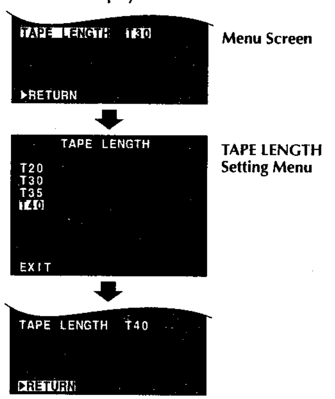
1. Set the Power Switch to "AUTO" or "PRO.". Press **SP/EP** for more than 1 second. "SP" (Standard Play) provides higher picture and sound quality and is better for dubbing, while "EP" (Extended Play) is more economical, providing three times the recording time.

NOTE:
If the recording mode is switched during recording, the playback picture will be blurred at the switching point.

Viewfinder


SP
T30
Tape length indicator
Recording mode indicator

Display

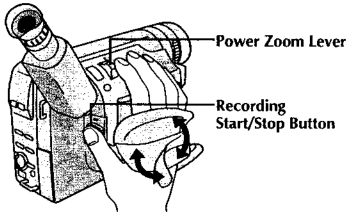

TAPE LENGTH T30
▸RETURN
Menu Screen
TAPE LENGTH
T20
T30
T35
T40
EXIT
TAPE LENGTH Setting Menu
TAPE LENGTH T40
▸RETURN

Tape Length Setting

Set the tape length according to the length of the tape used.

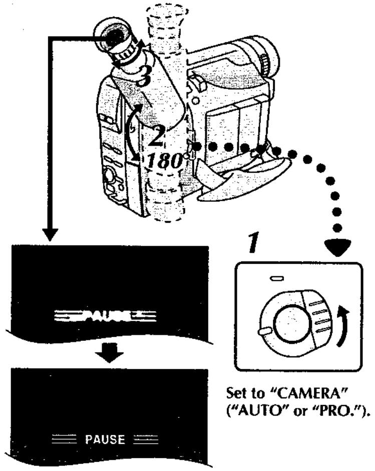
1. Set the Power Switch to "PRO.", then press **MENU**.
2. Rotate the Select Wheel to move the highlight bar to "TAPE LENGTH", then press it. The TAPE LENGTH Setting Menu appears.
3. Rotate the Select Wheel to move the highlight bar to the correct tape length setting. T20=20 minutes of recording time, T30=30 minutes, T35=35 minutes, and T40=40 minutes (in SP).
   - To return to the previous setting, rotate the Select Wheel to move the highlight bar to "EXIT".
4. Press the Select Wheel. The Menu Screen reappears with the highlight bar on "RETURN". Press the Select Wheel again to close the Menu Screen.

NOTE:
The tape remaining time (☞ pg. 14) displayed in the viewfinder is correct only if the correct tape length has been selected.


Power Zoom Lever
Recording Start/Stop Button

Grip Adjustment

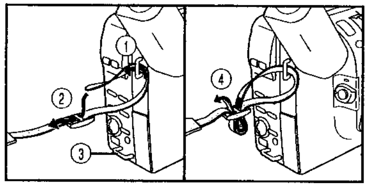
1. Separate the Velcro strip.
2. Pass your right hand through the loop and grasp the grip.
3. Adjust so that your thumb and fingers can easily operate the Recording Start/Stop Button and Power Zoom Lever. Refasten the Velcro strip.


3
2
180°
1
PAUSE
PAUSE

Set to "CAMERA" ("AUTO" or "PRO.").

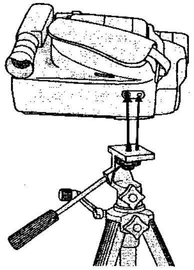
Viewfinder Adjustment

1. Set the Power Switch to "CAMERA" ("AUTO" or "PRO.").
2. Adjust the viewfinder manually for best viewability.
3. Turn the Diopter Adjustment Control until the indications in the viewfinder are clearly focused.



Shoulder Strap Attachment

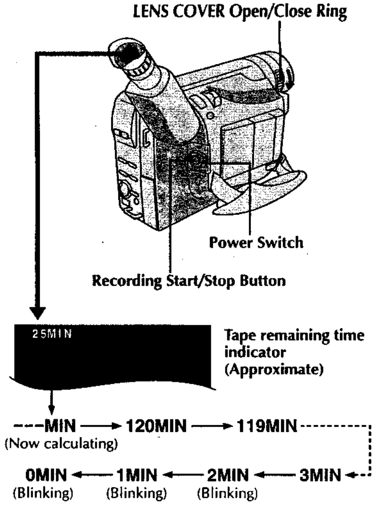
1. Following the illustration, thread the strap through the eyelet ①, then fold it back and thread it through the buckle ②. Repeat the procedure to attach the other end of the strap to the other eyelet ③, making sure the strap is not twisted.
2. Adjust as shown in the illustration ④.

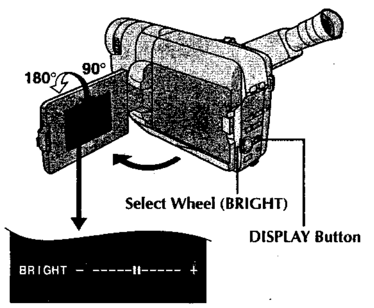


Tripod Mounting

1. Align the screw and camera direction stud on the tripod with the camera's mounting socket and stud hole. Then tighten the screw.

CAUTION:
When using a tripod, be sure to open and extend its legs fully to stabilize the camcorder. To prevent damage to the unit caused by falling over, do not use a small-sized tripod.


LENS COVER Open/Close Ring
Power Switch
Recording Start/Stop Button
25MIN
Tape remaining time indicator (Approximate)
---MIN → 120MIN → 119MIN
(Now calcultating)
0MIN ← 1MIN ← 2MIN ← 3MIN
(Blinking)
(Blinking)
(Blinking)



To Adjust The Brightness Of The LCD Monitor
.... rotate the Select Wheel (**BRIGHT**) until the bright level indicator on the display moves and the appropriate brightness is reached.

NOTE:
You should already have performed the procedures listed below. If not, do so before continuing.
- *Power (☞ pg. 8)*
- *Recording Mode Setting (☞ pg. 12)*
- *Load A Cassette (☞ pg. 10)*
- *Grip Adjustment (☞ pg. 13)*
- *Viewfinder Adjustment (☞ pg. 13)*

Shooting While Watching The Viewfinder

1 Make sure the LCD monitor is closed and locked. Turn the **LENS COVER** Open/Close Ring to open the lens cover. Set the Power Switch to "CAMERA" ("AUTO" or "PRO."). The power lamp lights and the camcorder enters the Record-Standby mode. "PAUSE" is displayed in the viewfinder.

2 Press the Recording Start/Stop Button. "REC ▶▶▶" appears in the viewfinder while recording is in progress.

Shooting While Watching The LCD Monitor

1 Make sure the LCD monitor is fully open. Turn the **LENS COVER** Open/Close Ring to open the lens cover. Set the Power Switch to "CAMERA" ("AUTO" or "PRO."). The power lamp lights and the camcorder enters the Record-Standby mode. "PAUSE" is displayed in the LCD monitor.

2 Tilt the LCD monitor upward/downward for best viewability and press the Recording Start/Stop Button. "REC ▶▶▶" appears in the LCD monitor while recording is in progress.

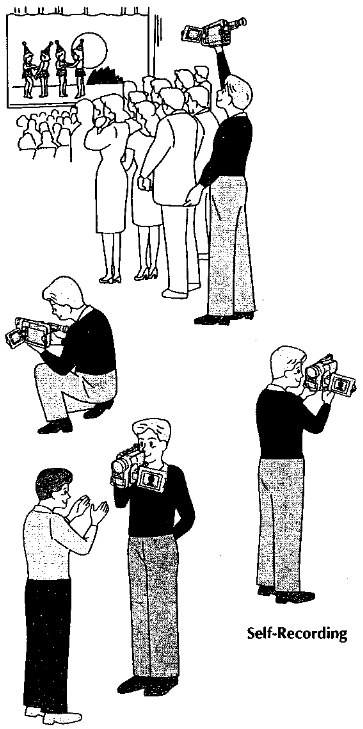
NOTE:
When you use the LCD monitor outdoors in direct sunlight, the LCD monitor may be difficult to see. If this happens, use the viewfinder instead.

To Stop Recording . . .
.... press the Recording Start/Stop Button. The camcorder re-enters the Record-Standby mode.

Power Switch Position

AUTO : Suitable for standard recording using NO special effects or manual adjustments.
PRO. : Allows you to set recording functions using the menus for more creative capabilities.
OFF : Switches off the camcorder.
PLAY : Allows you to play back your recordings.

NOTES:
- *When the Power Switch is set to CAMERA and the LCD monitor is opened at an angle of 60 degrees or more, the LCD monitor switches on and the viewfinder switches off automatically to save power.*
- *The cassette holder cannot be opened unless a power supply is attached.*
- *There may be a delay after you slide **EJECT** until the cassette holder opens. Do not use force.*
- *The time required to calculate the remaining tape length, and the accuracy of the calculation, may vary according to the type of tape used.*
- *The tape remaining time indicator is correct only if the correct tape length has been selected (☞ pg. 12).*
- *"TAPE END" appears when the tape reaches its end, and the power goes off automatically if left in this condition for 5 minutes. "TAPE END" also appears when a cassette whose tape is already at its end is loaded.*
- *If the Record-Standby mode continues for 5 minutes without performing Zoom or any other operations, the camcorder's power shuts off automatically. Set the Power Switch to "OFF", and then back to "CAMERA" to turn the camcorder on again.*
- *If the Recording Start/Stop button is pressed after the Record-Standby mode has continued for over 5 minutes, recording may not start immediately.*
- *If you are recording on a cassette from the middle (such as when a tape is removed and re-inserted during recording), use the Retake function (☞ pg. 17) to find the end of the last recording so you do not erase any of it.*
- *While shooting, sound is not heard from the speaker.*



JOURNALISTIC SHOOTING

In some situations, different shooting angles may provide more dramatic results. Hold the camcorder in the desired position and tilt the LCD monitor in the most convenient direction. It can rotate 270° (90° downward, 180° upward).

INTERFACE SHOOTING

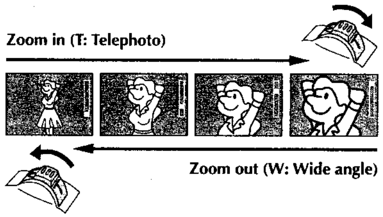
The person you shoot can view himself/herself in the LCD monitor, and you can even shoot yourself while viewing your own image in the LCD monitor.
Open the LCD monitor and tilt it upward to 180 degrees so that it faces forward. When the LCD monitor is tilted upward to an angle of over approx. 105 degrees, the monitor image is inverted vertically, and the viewfinder also switches on.
Point the lens toward the subject (yourself when self-recording) and start recording.
During Interface Shooting, the monitor image and indications do not appear inverted as they would when viewing a mirror.

NOTE:
The monitored image can be viewed on the LCD monitor and in the viewfinder.

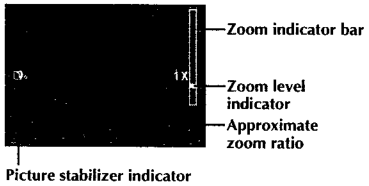
LCD MONITOR/VIEWFINDER INDICATIONS

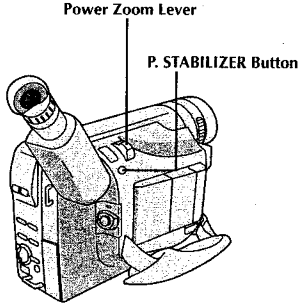
Press **DISPLAY** for more than 1 second to make the following indications appear/disappear from the camcorder's display: cassette warning, tape remaining time, battery pack remaining power indicator and tape length indicator (☞ pg. 38, 39).

NOTE:
Even if the indications are off, the tape remaining time appears blinking when the tape is near its end, and the battery pack remaining power indicator appears blinking when the power is almost gone.


Zoom in (T: Telephoto)
Zoom out (W: Wide angle)

Display





FEATURE: Zooming

PURPOSE:

To produce the zoom in/out effect, or an instantaneous change in image magnification.
Digital circuitry extends the maximum magnification offered by optical zoom. This system is called Digital Zoom.

OPERATION:

Zoom In
Slide the Power Zoom Lever towards "T".

Zoom Out
Slide the Power Zoom Lever towards "W".

- ■ The further you slide the Power Zoom Lever, the quicker the zoom action.

NOTES:

- *Focusing may become unstable during Zooming. In this case, set the zoom while in Record–Standby, lock the focus by using the manual focus (☞ pg. 26), then zoom in or out in Record mode.*
- *The zoom level indicator (■) moves during zoom. Once the zoom level indicator reaches the top of the zoom indicator bar, all magnification from that point is through digital processing.*
- *When using Digital Zoom, the quality of image may suffer. To deactivate Digital Zoom, set "D.ZOOM" to "OFF" in the Menu Screen (☞ pg. 21).*

FEATURE: Picture Stabilizer

PURPOSE:

To compensate for unstable images caused by camera-shake, particularly at high magnification.

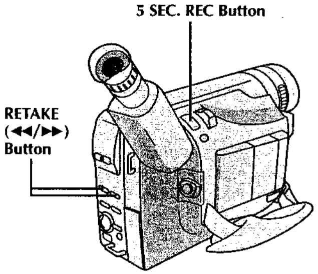
OPERATION:

Press **P. STABILIZER**. "✋"appears.

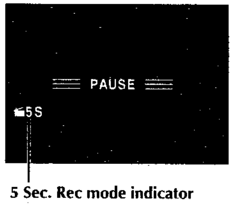
- ■ To switch off the Picture Stabilizer, press **P. STABILIZER**. The indicator disappears.

NOTES:

- *Accurate stabilization may not be possible if hand shake is excessive, or under the following conditions:*
  - *When shooting subjects with vertical or horizontal stripes.*
  - *When shooting dark or dim subjects.*
  - *When shooting subjects with excessive backlighting.*
  - *When shooting scenes with movement in various directions.*
  - *When shooting scenes with low-contrast backgrounds.*
- *Switch off the Picture Stabilizer when recording with the camcorder on a tripod.*
- *The "✋" indicator appears blinking if the Stabilizer cannot be used.*



Display



FEATURE: Quick Review

PURPOSE:

To check the end of the last recording.

OPERATION:

1) Set the Power Switch to "CAMERA" ("AUTO" or "PRO.").
2) Press ◀◀ and release quickly during the Record–Standby mode.

- ■ Tape is rewound for approx. 2 seconds and played back automatically, then pauses in Record–Standby mode for the next shot.

NOTE:

Distortion may occur at the start of playback. This is normal.

FEATURE: Retake

PURPOSE:

To re-record certain segments.

OPERATION:

1) Make sure the camcorder is in the Record–Standby mode.
2) Press and hold either **RETAKE** to reach the start point for new recording. Pressing ▶▶ forwards the tape and pressing ◀◀ reverses it.
3) Press the Recording Start/Stop Button to start recording.

NOTE:

Noise bars appear and pictures may become monochrome or darken during Retake. This is normal.

FEATURE: 5Sec. Rec (5-sec. Recording)

PURPOSE:

To record a scene for 5 seconds, providing quick scene transitions like those seen in TV programs.

OPERATION:

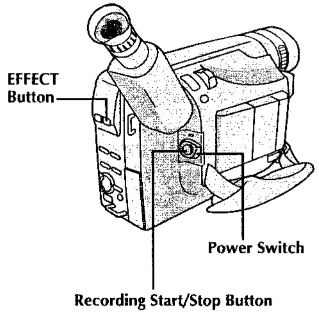
- ■ Make sure the recording mode is set to "SP".

1) During Record–Standby, press **5SEC. REC.** "📹 5S" appears and 5Sec. Rec is reserved.
2) Press the Recording Start/Stop Button. Recording starts, and after 5-second recording is finished, the camcorder reenters the Record–Standby mode automatically.

- ■ To cancel the 5Sec. Rec. function, press **5SEC. REC** again so that "📹 5S" disappears.

NOTE:

*Fade/Wipe (☞ pg. 18) cannot be activated by pressing **5SEC. REC.***



Fade/Wipe Effects

These effects let you make pro-style scene transitions. Fade- or wipe-in works at recording start, and fade- or wipe-out works at recording end or when you enter Record–Standby mode.

1 Set the Power Switch to "PRO.".

2 Press **EFFECT** repeatedly until the desired mode's name and indication appear.
They are displayed for approx. 2 seconds, then the name disappears so that only the indication remains.
The effect is reserved.

3 Press the Recording Start/Stop Button to activate fade-in/out or wipe-in/out.

4 To cancel a fade or wipe, press **EFFECT** repeatedly until "OFF" appears.
"OFF" is displayed for approx. 2 seconds and the fade/wipe standby mode is canceled.

Bk FADER

Fades in/out to a black screen.

MOSAIC (Fader)

Gradually turns/returns the picture into/from a mosaic pattern.

SHUTTER (Wipe)

A black screen moves in from the top and bottom, closing over the image like a shutter, or a new image pushes open the black screen vertically from the center.

SLIDE (Wipe)

A black screen moves in from the left to gradually cover the image, or a new image moves in from right to left.

DOOR (Wipe)

Wipes in as the two halves of a black screen open to the left and right, revealing the scene, or wipes out and the black screen reappears from left and right to cover the scene.

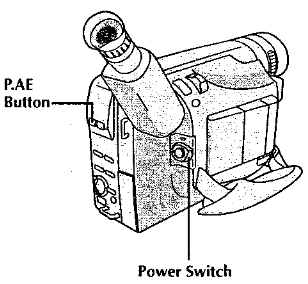
CW:CORNER (Wipe)

Wipes in on a black screen from the upper right to the lower left corner, or wipes out from lower left to upper right, leaving a black screen.

WW:WINDOW (Wipe)

The next scene gradually wipes in from the center of the screen toward the corners, covering the previous scene.

NOTES:
- *Pressing and holding the Recording Start/Stop Button allows you to vary the length for the image during fade in/out or wipe in/out.*
- *The screen becomes slightly reddish when the Fade/Wipe is used with Sepia (☞ pg. 19).*
- *With the Electronic fog filter mode (☞ pg. 19) engaged, the image fades in/out to a white screen.*



Program AE With Special Effects

1 Set the Power Switch to "PRO.".

2 Press **P.AE** repeatedly until the desired mode's name and indication appear.
They are displayed for approx. 2 seconds, then the name disappears so that only the indication remains.
The mode is activated.

3 To cancel the effect, press **P.AE** repeatedly until "OFF" appears. "OFF" is displayed for approx. 2 seconds.

NOTES:
- *Only one mode can be engaged at a time.*
- *The screen becomes slightly reddish when the Fade/Wipe (☞ pg. 18) is used in the Sepia mode.*
- *The screen becomes slightly dark in the High Speed Shutter mode. Use in well-lit situations.*
- *In the "High Speed Shutter" or "Sports" modes, picture color may be adversely affected if the subject is lit by alternating discharge-type light sources such as flourescent or mercury-vapor lights.*

SEPIA

The scene being shot is recorded in sepia-tinted (reddish-brown) monochrome, giving the effect of an older movie. Use together with Wide (☞ pg. 21) for the authentic look of a classic Hollywood movie.

SPORTS

High shutter speed clearly captures fast-moving action.

ND:ND EFFECT

A black mist darkens the picture, as when an ND filter is used. Helps to counter the effects of glare on the subject.

FG:FOG

Makes the picture look misty white, as when an external fog filter is attached to the lens. Softens the image and gives it a "fantasy" look.

TWILIGHT

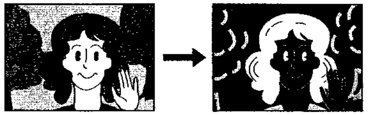
Dusk, twilight scenery, fireworks, etc., look more natural and dramatic. The following happens when Twilight mode is selected:
- Auto gain control is turned off.
- White Balance is set to " ☀ :FINE" (day mode), but can also be manually changed to another mode (☞ pg. 27).
- Auto Focus becomes available only in the range of 10 m (32 ft.) to infinity. To focus when the subject-to-camera distance is less than 10 m (32 ft.), use manual focusing (☞ pg. 26).

S1/2000

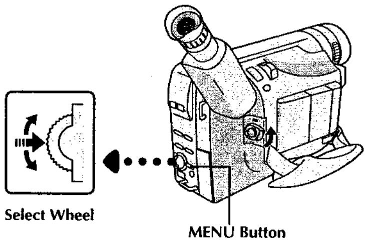
Captures faster action than Sports mode.

NEGA POSI

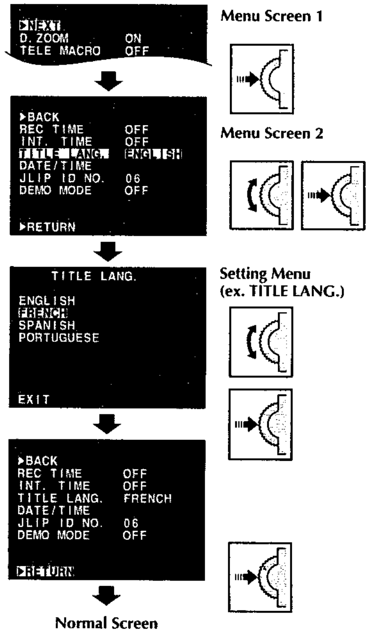
The colors of a picture are reversed.



NEGA POSI mode



Display
(ex. Menu Screen available using the MENU Button)



Using Menus For Detailed Adjustment

This camcorder is equipped with an easy-to-use, on-screen menu system that simplifies many of the more detailed camcorder settings.

1 Set the Power Switch to "PRO.".

2 Menu access depends on the function you select.

If you select the functions from the "Menu Screen Available Using The Select Wheel" described on pg. 21 . . .

.... press the Select Wheel. The Menu Screen appears.

If you select the functions from the "Menu Screen Available Using The MENU Button" described on pg. 21 and 22 . . .

.... press **MENU**. The Menu Screen appears.

3 Rotate the Select Wheel to place the highlight bar on the desired function.

- To go from Menu Screen 1 to Menu Screen 2, rotate the Select Wheel to "NEXT" and press it. To go back to Menu Screen 1 from Menu Screen 2, rotate the Select Wheel to "BACK", and press it.
- To return to the previous setting, place the highlight bar on "RETURN", then go to step **6**.

4 Press the Select Wheel. The setting procedure depends on the function you select.

If you select "FOCUS", "EXPOSURE", "M.W.B." or "DATE/ TIME". . .

.... see respective pages (FOCUS: ☞ pg. 26, EXPOSURE: ☞ pg. 24, M.W.B.: ☞ pg. 27, DATE/TIME: ☞ pg. 11) and perform each procedure from step **4**.

If you select "JLIP ID NO." . . .

.... rotate the Select Wheel until the desired number appears, and press it. Then rotate the Select Wheel to move the highlight bar to "EXIT".

If you select any other functions . . .

.... rotate the Select Wheel to move the highlight bar to the desired setting.

- To return to the previous setting, place the highlight bar on "RETURN".

5 Press the Select Wheel. The Menu Screen reappears with the highlight bar on "RETURN".

6 Press the Select Wheel. The normal screen reappears.

NOTE:

No menu functions except "FOCUS" and "EXPOSURE" are available while in the Record mode.

MENU SCREEN EXPLANATIONS

Menu Screen Available Using The Select Wheel

FOCUS	Refer to "Focusing" (☞ pg. 26).	
EXPOSURE	Refer to "Exposure Control" (☞ pg. 24).	
M.W.B.	Refer to "White Balance Adjustment" and "Manual White Balance Operation" (☞ pg. 27).	
WIDE	**OFF** ▨	Does not display black bars.
	ON	Allows you to record black bars at the top and bottom of the screen to produce a cinema-like "wide-screen" effect.
S.LX	**MAX** ▨	To record a subject in a darkly lit environment, when it is more convenient to shoot the subject with a brighter image even if the picture becomes slightly coarse.
	NORMAL	To record a subject in a dimly lit environment, when it is more convenient to shoot with a less coarse picture although the subject becomes slightly dark. This setting is suitable for measuring sensitivity conforming to EIA-639 (EIA* Standard for Low Light Sensitivity Measurement). *EIA : Electronic Industries Alliance
	OFF	Allows you to shoot dark scenes with no picture brightness adjustment.
TITLE	Allows you to superimpose one of eight preset titles (☞ pg. 23).	
DATE/TIME DISP.	Makes the date/time settings appear in the camcorder or on a connected monitor (☞ pg. 23).	

Menu Screen Available Using The MENU Button

This Menu Screen cannot be accessed while recording.

D. ZOOM	**ON** ▨	Allows you to use the Digital Zoom. By digitally processing and magnifying images, zooming is possible from 16X (the optical zoom limit), to a maximum of 300X digital magnification.
	OFF	Digital Zoom is not available. Only optical zoom (maximum 16x magnification) can function. When set to "OFF" during Digital Zoom, zoom magnification changes to 16X.
TELE MACRO	**OFF** ▨ **ON**	Usually the distance to a subject where the lens is in focus depends on the zoom magnification. Unless there is a distance of more than 1 m (3.25 ft.) to the subject, the lens is out of focus at the maximum telephoto setting. When set to "ON", you can shoot a subject as large as possible at a distance of approx. 60 cm (23-5/8"). • Depending on the zoom position, the lens may go out of focus.

▨ : **Factory-preset**

CONTINUED ON NEXT PAGE

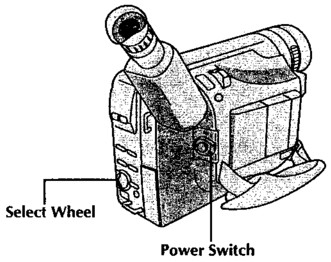
Menu Screen Available Using The MENU Button (cont.)

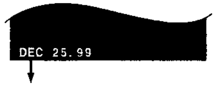
TAPE LENGTH	Allows you to set the tape length depending on the tape used (☞ pg. 12).	
REC TIME	Refer to "Animation" and "Time-Lapse" (☞ pg. 25).	
INT. TIME	Refer to "Time-Lapse" (☞ pg. 25).	
TITLE LANG.	Allows you to select the language (ENGLISH, FRENCH, SPANISH or PORTUGUESE) of Instant Titles (☞ pg. 23).	
DATE/TIME	Allows you to set the current date and time (☞ pg. 11).	
JLIP ID NO.	This number is necessary when connecting the camcorder to a device such as a computer using the J terminal (JLIP). The numbers range from 01 to 99. Factory setting is 06.	
DEMO MODE	**ON** ▨	Demonstrates certain functions such as Fade/Wipe, etc. When "DEMO MODE" is set to "ON" and the Menu Screen is closed, the demonstration starts. Operating the Power Zoom Lever during the demonstration stops the demonstration temporarily. If the Power Zoom Lever is not moved for more than 1 minute after that, the demonstration will resume. **NOTE:** *When a tape whose Erase Protection tab is in the position that allows recording is loaded in the camcorder, demonstration is not available.*
	OFF	Automatic demonstration will not take place.

▨ : **Factory-preset**

Date/Time Insert

Allows you to display the date and time in the camcorder or on a connected color monitor, as well as to record them manually or automatically.
You should have already performed the Date/Time Setting procedure (☞ pg. 11).





AUTO DATE ←
↓
DEC 25.99
↓ **(DATE)**
AM 10:25:00
↓ **(TIME)**
DEC 25.99 AM 10:25:00
↓ **(DATE&TIME)**
No indication
(OFF)

1. Set the Power Switch to "PRO.".
2. Press the Select Wheel to display the Menu Screen.
3. Rotate the Select Wheel to move the highlight bar to "DATE/TIME DISP." while in Record-Standby, then press it to display the Date/Time DISP. Menu.
4. Rotate the Select Wheel to move the highlight bar to the desired mode, then press it. The desired mode is activated.
5. The Menu Screen reappears with the highlight bar on "RETURN". Press the Select Wheel to close the Menu Screen.

NOTES:

DISPLAY

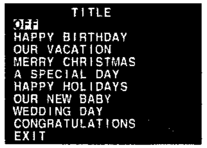
- *The selected display can be recorded.*
- *If you do not want to record the display, select the OFF mode before shooting.*

AUTO DATE

- *Your camcorder automatically records the date for about 5 seconds after recording is initiated in the following situations:*
  - *After changing the date.*
  - *After loading a cassette.*
  - *After Auto Date Record mode is selected by rotating the Select Wheel.*
- *In this mode, the date is replaced after 5 seconds with "AUTO DATE" but this is not recorded.*

Instant Titles

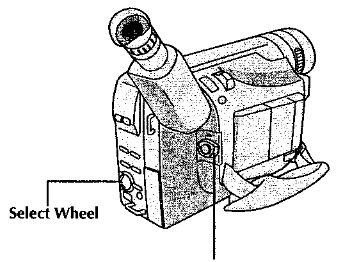
The camcorder has eight preset titles in memory. You can superimpose one of them over the video image.
Instant Titles can be displayed not only in English but also in French, Spanish and Portuguese. Change the setting in TITLE LANG. in the Menu Screen. (☞ pg. 20, 22).

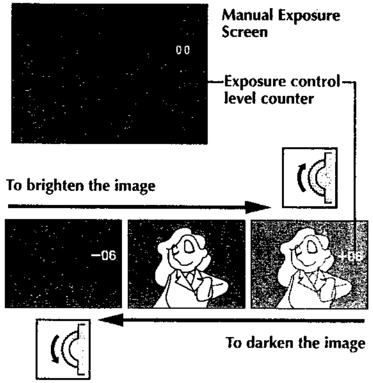


TITLE
OFF
HAPPY BIRTHDAY
OUR VACATION
MERRY CHRISTMAS
A SPECIAL DAY
HAPPY HOLIDAYS
OUR NEW BABY
WEDDING DAY
CONGRATULATIONS
EXIT

1. Set the Power Switch to "PRO.".
2. Press the Select Wheel to display the Menu Screen.
3. Rotate the Select Wheel to move the highlight bar to "TITLE" while in Record-Standby, then press it to display the TITLE Menu.
4. Rotate the Select Wheel to move the highlight bar to the desired mode, then press it. The desired mode is activated.
   - To make the title indication disappear, select "OFF".
5. The Menu Screen reappears with the highlight bar on "RETURN". Press the Select Wheel to close the Menu Screen.

NOTE:
The selected title will remain until OFF is selected in the TITLE Menu.





Exposure Control

This feature automatically adjusts the iris for the best available picture quality, but you can override it and make the adjustment manually. Manual exposure adjustment is recommended in the following situations:

- *When shooting using reverse lighting or when the background is too bright.*
- *When shooting on a reflective natural background such as at the beach or when skiing.*
- *When the background is overly dark or the subject light.*

1. Set the Power Switch to "PRO.".
2. Press the Select Wheel to display the Menu Screen.
3. Rotate the Select Wheel to move the highlight bar to "EXPOSURE" and press it. The EXPOSURE Menu appears.
4. Rotate the Select Wheel to move the highlight bar to "MANU", then press it. The Menu Screen disappears and "00" (exposure control level counter) appears.
5. To brighten the image, rotate the Select Wheel upward. The exposure control level counter increases (maximum +06).
   To darken the image, rotate the Select Wheel downward. The exposure control level counter decreases (maximum −06).
6. Press the Select Wheel. The setting is complete. The Menu Screen reappears with the highlight bar on "RETURN".
7. Press the Select Wheel. The Menu Screen disappears and the exposure control level counter reappers to indicate the exposure is adjusted.

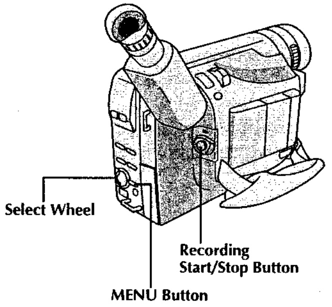
NOTES:

- *To return to the factory setting, select "AUTO" in step **4**.*
- *To re-adjust exposure, repeat the procedure from step **2**.*

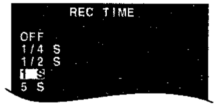
NOTES:

Before performing the following steps, make sure that:

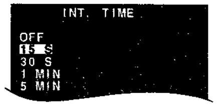
- *The Power Switch is set to "PRO.".*
- *The camcorder is in the Record-Standby mode.*
- *The recording mode is set to "SP".*



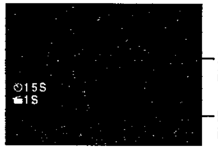
Display



REC TIME Menu



INT. TIME Menu



INT. TIME and REC TIME indications on the normal screen

Animation

You can shoot a series of pictures, each slightly different, of the same object for a brief period of time.

1. Press **MENU**. The Menu Screen appears.
2. Rotate the Select Wheel to move the highlight bar to "NEXT" in Menu Screen 1 and press it to display Menu Screen 2. Then, move the highlight bar to "REC TIME" and press it. The REC TIME Menu appears. Rotate the Select Wheel to move the highlight bar to the desired recording time, then press it. The Menu Screen reappears with the highlight bar on "RETURN".
3. Press the Select Wheel again to close the Menu Screen.
4. Press the Recording Start/Stop Button after focusing on the subject. The recording stops automatically after the selected period of time.
   - Repeat step **4** for the desired number of pictures.
5. To release the Animation mode, set "REC TIME" in the Menu screen to "OFF".

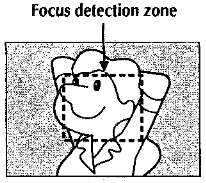
Time-Lapse

You can record sequentially at preset time spans. Leaving the camcorder aimed at a specific subject, you can record subtle changes over an extended period of time.

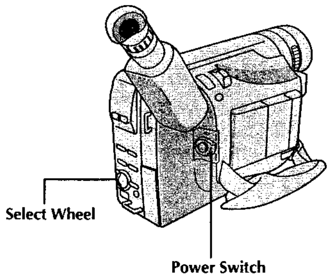
1. Set "REC TIME" (☞ step **1** and **2** of "Animation" above).
2. Rotate the Select Wheel to move the highlight bar to "INT. TIME" and press it. The INT. TIME Menu appears. Rotate the Select Wheel to move the highlight bar to the desired interval time, then press it. The Menu Screen reappears with the highlight bar on "RETURN". Press the Select Wheel again to close the Menu Screen.
3. Press the Recording Start/Stop Button. Recording and intervals alternate automatically.
4. To release the Time-Lapse mode, when "REC ▶▶▶" is not displayed, press the Recording Start/Stop Button to display "≡**PAUSE**≡", then set "REC TIME" and "INT. TIME" in the Menu Screen to "OFF".

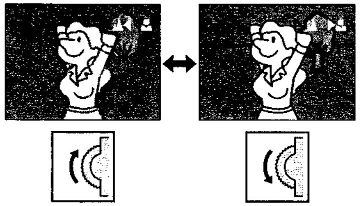
NOTES (for Animation and Time-Lapse):

- *For best results, make sure the camcorder is secured when shooting in Animation or Time-Lapse mode.*
- *Fade- or wipe-in/out cannot be performed during Animation or Time-Lapse shooting.*
- *Before performing other operations following Animation or Time-Lapse recording, make sure the Animation or Time-Lapse mode is deactivated.*
- *Animation and Time-Lapse are canceled when the power is shut off or when the cassette is ejected.*



NOTES:
- *If the lens is smeared or blurred, accurate focusing is not possible. Keep the lens clean, wiping with a piece of soft cloth if it gets dirty. When condensation occurs, wipe with a soft cloth or wait for it to dry naturally.*
- *When shooting a subject close to the lens, zoom out first (☞ pg. 16). If zoomed in in the auto focus mode, the camcorder could automatically zoom out depending on the distance between the camcorder and the subject. This does not occur with "TELE MACRO" (☞ pg. 21).*





Focusing

AUTO FOCUS

The camcorder's Full Range AF system offers continuous shooting ability from close-up to infinity. However, correct focus may not be obtainable in the situations listed below (in these cases use manual focusing):

- When two subjects overlap in the same scene.
- When illumination is low.*
- When the subject has no contrast (difference in brightness and darkness), such as a flat, one-color wall, or a clear, blue sky.*
- When a dark object is barely visible in the viewfinder.*
- When the scene contains minute patterns or identical patterns that are regularly repeated.
- When the scene is affected by sunbeams or light reflecting off the surface of a body of water.
- When shooting a scene with a high-contrast background.

* The low-contrast warning "▲👤" appears

MANUAL FOCUS

If you are using the viewfinder, you should already have made the necessary viewfinder adjustments (☞ pg. 13).

1 Set the Power Switch to "PRO.".

2 Press the Select Wheel to display the Menu Screen.

3 Rotate the Select Wheel to move the highlight bar to "FOCUS" and press it. The FOCUS Menu appears.

4 Rotate the Select Wheel to move the highlight bar to "MANU", then press it. The Menu Screen disappears and "▲" and "👤" appear. The focus is locked at this point.

5 To focus on a farther subject, rotate the Select Wheel upward. "◀" appears and blinks.
To focus on a nearer subject, rotate the Select Wheel downward. "▶" appears and blinks.

6 Press the Select Wheel. The setting is complete. The Menu Screen reappears with the highlight bar on "RETURN".

7 Press the Select Wheel. The Menu Screen disppears and "▲👤" reappears to indicate the focus is locked.

NOTES:
- *To return to Auto Focus, select "AUTO" in step **4**.*
- *To re-adjust Manual Focus, repeat the procedure from step **2**.*
- *Be sure to focus the lens in the maximum telephoto position when you use the Manual Focus mode. If you focus in on a certain subject in the wide-angle position, sharply focused images cannot be obtained when zoomed in because the depth-of-field is reduced at longer focal lengths.*
- *When the focus level cannot be adjusted any farther or closer, "▲" or "👤" will blink.*

White Balance Adjustment

A term that refers to the correctness of color reproduction under various lighting. If the white balance is correct, all other colors will be accurately reproduced.
The white balance is usually adjusted automatically. However, more advanced camcorder operators control this function manually to achieve a more professional color/tint reproduction.

1 Set the Power Switch to "PRO.".

2 Press **MENU**. The Menu Screen appears.

3 Rotate the Select Wheel to move the highlight bar to "M.W.B.", then press it. The Menu Screen disappears and the M.W.B. Menu appears.

4 Rotate the Select Wheel to move the highlight bar to the desired setting.

"AUTO"
White balance is adjusted automatically (factory preset).

"☀ : **FINE**"
Outdoors on a sunny day.

"⛅ : **CLOUD**"
Outdoors on a cloudy day.

"✹ : **HALOGEN**"
A video light or similar type of lighting is used.

"MWB"
White balance is set manually.

5 Press the Select Wheel. The Menu Screen reappears with the highlight bar on "RETURN". Press the Select Wheel again to close the Menu Screen.

To Return To Automatic White Balance . . .
.... select "AUTO" in step **4**. Or set the Power Switch to "AUTO".

NOTE:
White balance cannot be used when Sepia (☞ pg. 19) is activated.

Manual White Balance Operation

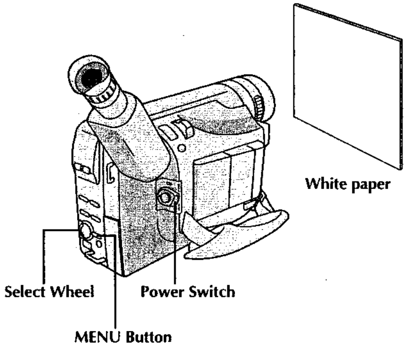
Perform Manual White Balance when shooting under various types of lighting.

1 Follow steps **1** through **4** of the white balance adjustment, and select "MWB".

2 Hold a sheet of plain white paper in front of the subject. Adjust zoom or position yourself so that the white paper fills the screen.

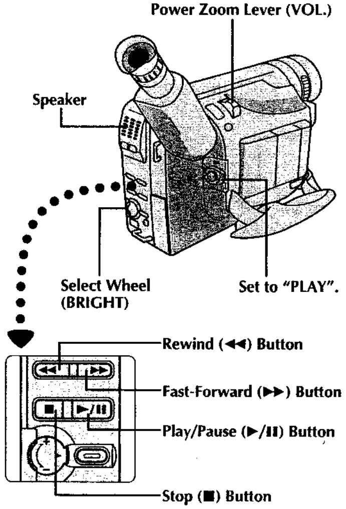
3 Press the Select Wheel until "MWB" begins blinking.
When the setting is completed, "MWB" stops blinking, and the Menu Screen reappears with the highlight bar on "RETURN".

4 Press the Select Wheel again to close the Menu Screen.



To Change The Tint For Recording . . .
.... in step **2**, substitute colored paper for white. The white balance is adjusted based on the color, changing the tint. Red paper = deeper green; blue paper = orange; yellow paper = deeper purple.

NOTES:
- *In step **2**, it may be difficult to focus on the white paper. In such a case, adjust focus manually (☞ pg. 26).*
- *A subject can be shot under various types of lighting conditions indoors (natural, flourescent, candlelight, etc.). Because the color temperature is different depending on the light source, the subject tint will differ depending on the white balance settings. Use this function for a more natural result.*
- *Once you adjust white balance manually, the setting is retained even if the power is turned off or the battery removed.*



1 Load a tape (☞ pg. 10).

2 Set the Power Switch to "PLAY". To start playback, press ▶/❚❚.
- To stop playback, press ■.
- Press ◀◀ to rewind, or ▶▶ to fast-forward the tape during Stop mode.

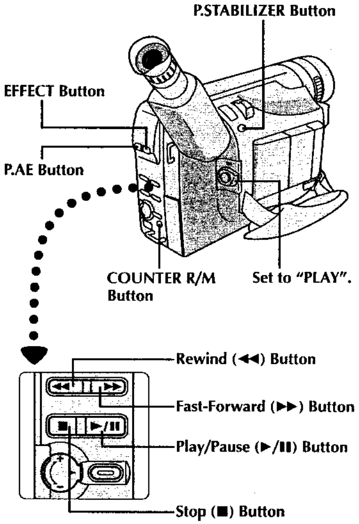
NOTES:
- *The camcorder shuts off automatically after about 5 minutes in Stop mode. To turn on again, set the Power Switch to "OFF", then to "PLAY".*
- *When the Power Switch is set to "PLAY" and the LCD monitor is opened at an angle of 60 degrees or more, the LCD monitor switches on and the viewfinder switches off automatically to save power.*
- *The playback picture can be viewed in the viewfinder (with the LCD monitor shut), on the LCD monitor or on a connected TV (☞ pg. 30, 31).*
- *You can also view the playback picture on the LCD monitor with it flipped over and retracted.*
- *If a blank portion on the tape is played back, the screen may become black. This is not a malfunction.*

LCD Monitor Brightness Adjustment: Rotate the Select Wheel (**BRIGHT**) towards "+" to brighten, or towards "–" to darken.
- *The Bright Level Indicator is displayed under the Date/Time Display when you play back images recorded in Wide Mode (☞ pg. 21).*

Speaker Volume Control: Slide the Power Zoom Lever (**VOL.**) towards "+" to turn up the volume, or towards "–" to turn down the volume.
- *The Speaker Volume Indicator is displayed under the Date/Time Display when you play back images recorded in Wide Mode (☞ pg. 21).*

Still Playback: Pauses during playback.
1) Press ▶/❚❚ during playback.
2) To resume normal playback, press ▶/❚❚ again.
- *Noise bars will appear and the picture will become monochrome during Still Playback.*

Shuttle Search: Allows high-speed search in either direction.
1) Press ▶▶ for forward or ◀◀ for reverse search during playback.
2) To resume normal playback, press ▶/❚❚.
- *During playback, press and hold ◀◀ or ▶▶. The search continues as long as you hold the button. Once you release it, normal playback resumes.*
- *Noise bars appear and pictures may become monochrome or darken during Shuttle Search. This is normal.*



Tracking: Eliminates noise bars that appear on-screen during playback. Factory-preset is Auto Tracking.
To activate Manual Tracking:
1) Press **P.AE** and **EFFECT** simultaneously. "MT" appears.
2) Press **P.AE** or **EFFECT** as many times as necessary until the noise bars disappear.
- *To return to Auto Tracking, press **P.AE** and **EFFECT** simultaneously. "AT" blinks. When Auto Tracking finishes, the indication disappears.*
- *When noise bars appear during playback, the camcorder enters the Auto Tracking mode and "AT" is displayed.*
- *Manual Tracking may not work with tapes recorded on other VCRs or camcorders.*

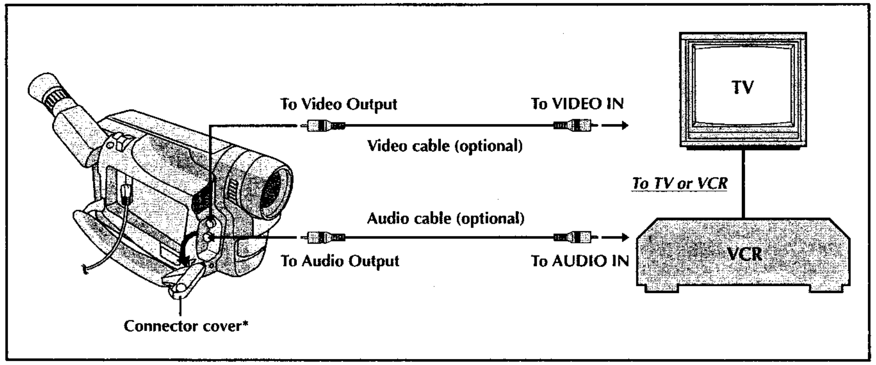
TBC (Time Base Corrector): Removes jitter from fluctuating video signals to deliver a stable picture even with old tapes. Factory-preset: TBC is engaged.
To activate/release the TBC mode, press **P.STABILIZER** during playback for more than 1 second. When the TBC mode is activated, "TBC" is displayed.
- *The "TBC" indicator turns green (gray with a camcorder equipped with a black/white viewfinder) while TBC is working.*
- *TBC does not work during still playback and shuttle search.*
- *The "TBC" indicator turns white while TBC is not operative.*
- *It may take a few seconds before TBC actually starts working.*
- *The picture may be distorted if the TBC mode is activated or deactivated at the edit-in/-out points or when normal playback resumes after still playback or shuttle search.*
- *If the playback picture is distorted when TBC is set to on, turn off TBC.*

Counter Memory Function: Makes it easier to locate a specific tape segment.
1) Press **COUNTER R/M** and hold for more than 1 second. The counter resets to "0:00:00".
2) Press **COUNTER R/M** for less than 1 second. "M" appears.
3) After recording or playback, press ■, then ◀◀. The tape automatically stops at or close to 0:00:00.
4) Press ▶/❚❚ to start playback.
- *The counter memory functions in the Fast-Forward and Rewind modes.*
- *To disable the Counter Memory Function, press **COUNTER R/M** for less than 1 second so that "M" disappears.*

These are some basic types of connections. When making connections, refer also to your VCR and TV instruction manuals.

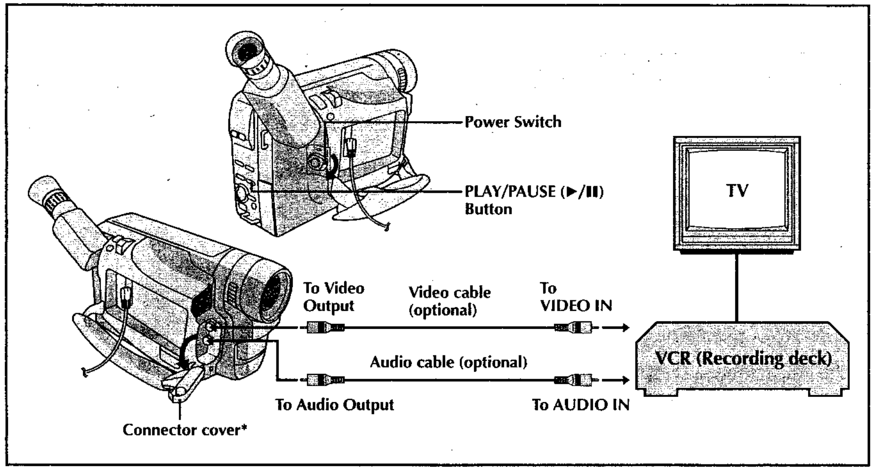
Basic Connections

Use optional Video and Audio cables.


To Video Output
To VIDEO IN
Video cable (optional)
TV
To TV or VCR
Audio cable (optional)
VCR
To Audio Output
To AUDIO IN
Connector cover*

Connection For Tape Dubbing

Use optional Video and Audio cables.


Power Switch
PLAY/PAUSE (►/II) Button
TV
To Video Output
Video cable (optional)
To VIDEO IN
Audio cable (optional)
VCR (Recording deck)
To Audio Output
To AUDIO IN
Connector cover*

* When connecting the cables, open this cover.

Basic Connections

1 Make sure all units are turned off.

2 Connect the camcorder to a TV or VCR as shown in the illustration (☞ pg. 30).
If using a VCR . . . go to step ***3****.*
If not . . . go to step ***4****.*

3 Connect the VCR output to the TV input, referring to your VCR's instruction manual.

4 Turn on the camcorder, the VCR and the TV.

5 Set the VCR to its AUX input mode, and set the TV to its VIDEO mode.

NOTES:

- ***It is recommended to use the AC Power Adapter/ Charger as the power supply instead of the battery pack (☞ pg. 9).***
- *To monitor the picture and sound from the camcorder without inserting a tape, set the camcorder's Power Switch to "CAMERA" ("AUTO" or "PRO."), then set your TV to the appropriate input mode.*
- *Make sure you adjust the TV sound volume to its minimum level to avoid a sudden burst of sound when the camcorder is turned on.*
- *If you have a TV or speakers that are not specially shielded, do not place the speakers adjacent to the TV as interference will occur in the camcorder playback picture.*

Tape Dubbing

1 Following the illustration on pg. 30, connect the camcorder and the VCR.

2 Set the camcorder's Power Switch to "PLAY", turn on the VCR's power, and insert the appropriate cassettes in the camcorder and the VCR.

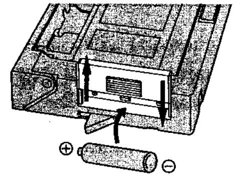
3 Engage the VCR's AUX and Record-Pause modes.

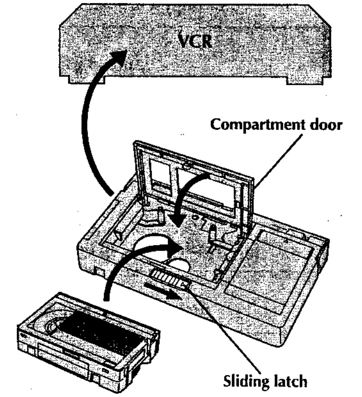
4 Engage the camcorder's Play mode to find a spot just before the edit-in point. Once it is reached, press **►/II** on the camcorder.

5 Press **►/II** on the camcorder and engage the VCR's Record mode.

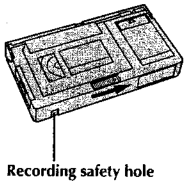
6 Engage the VCR's Record-Pause mode and press **►/II** on the camcorder.

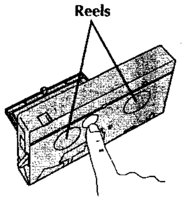
7 Repeat steps **4** through **6** for additional editing, then stop the VCR and camcorder when finished.





Compact video cassette





Cassette Adapter (VHS Playpak)

Use this to play back a VHS-C video cassette recorded with this camcorder on a VHS VCR. It is fully compatible with any VHS video cassette recorder. The C-P7U adapter is battery powered and automatically performs tape loading and unloading.

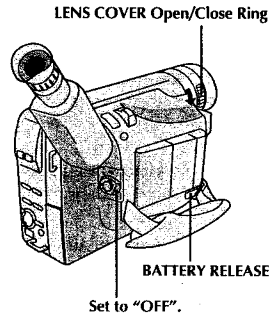
1 Slide the battery cover up to remove it, install one "AA (R6)" size battery as shown, then reattach the cover.

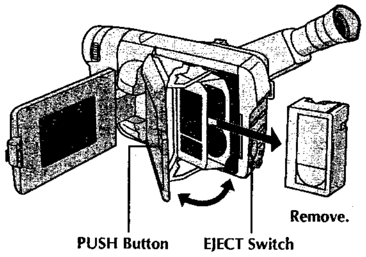
2 Slide the latch to open the adapter compartment door, then insert the cassette and close the compartment door.

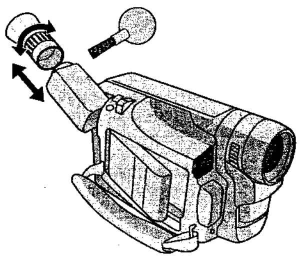
3 Load the cassette adapter into the VCR and play the tape back as you would any other.

4 Slide the latch and the compartment door opens automatically. This may take around 10 seconds. Do not attempt to force the adapter open. Then, insert your finger in the hole on the underside of the adapter as shown in the illustration at left, and push up and remove the cassette.

NOTES:
- *During tape loading and unloading, do not touch the reels for safety and tape protection.*
- *During special-effect playback (slow motion, still frame, etc.), the picture may vibrate or noise bars may appear on the screen.*
- *To record on a VCR using a compact cassette and the adapter, cover the adapter's recording safety hole with adhesive tape.*







After Use

1 Turn off the camcorder.

2 Open the LCD monitor fully. Slide **EJECT** to open the cassette holder, then remove the cassette.

3 Press **PUSH** to close and lock the cassette holder.

4 Close and lock the LCD monitor.

5 Slide **BATTERY RELEASE** to remove the battery pack.

6 Turn the **LENS COVER** Open/Close Ring to close the lens cover.

Cleaning The Camcorder

1 To clean the exterior, wipe gently with a soft cloth. Put the cloth in diluted mild soap and wring it well to wipe off heavy dirt. Then wipe again with a dry cloth.

2 Open the LCD monitor and wipe gently with a soft cloth. Be careful not to damage the monitor. Close the LCD monitor.

3 To clean the lens, blow it with a blower brush, then wipe gently with lens cleaning paper.

4 To detach the eyepiece, turn it counterclockwise and pull it out.

5 Remove dust from the viewfinder using a blower brush.

6 Re-attach the eyepiece and turn it clockwise.

NOTES:
- *Avoid using strong cleaning agents such as benzine or alcohol.*
- *Cleaning should be done only after the battery pack has been removed or other power units have been disconnected.*
- *Mold may form if the lens is left dirty.*
- *When using a cleaner or chemically treated cloth refer to the cautions of each product.*
- *When removing the eyepiece, be sure to hold the viewfinder securely.*

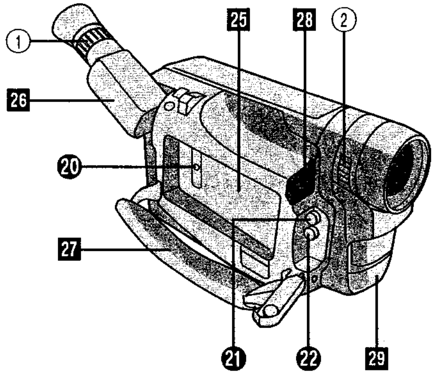
If, after following the steps in the chart below, the problem still exists, please consult your JVC dealer.

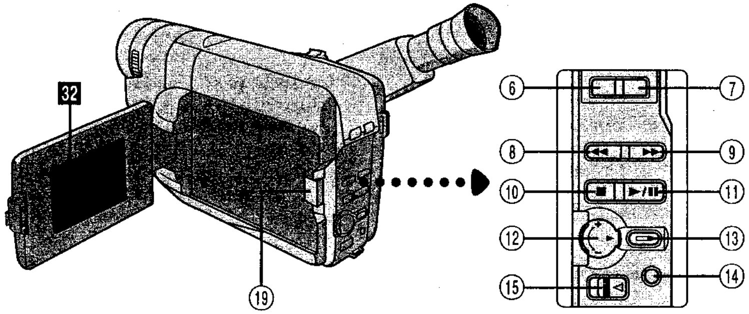
The camcorder is a microcomputer-controlled device. External noise and interference (from a TV, a radio, etc.) might prevent it from functioning properly. In such cases, first disconnect its power supply unit (battery pack, AC Power Adapter/Battery Charger, etc.) and clock battery; and then re-connect it and proceed as usual from the beginning.

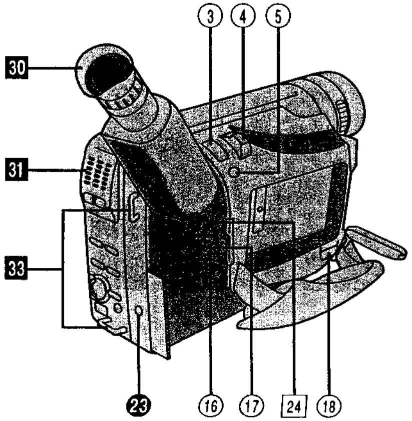
SYMPTOM	POSSIBLE CAUSE(S)
POWER	
No power is supplied.	• The battery pack has not been attached correctly (☞ pg. 8). • The battery pack is not charged (☞ pg. 8). • The power supply has not been correctly connected (☞ pg. 9).
The power suddenly goes off and does not come back on by itself.	• The battery pack has completely discharged. • Remove the cassette and disconnect the power source, then after a few minutes, try turning the power back on. If it still does not come on, consult your nearest JVC dealer.
RECORDING	
Recording cannot be performed.	• Make sure the Erase Protection tab is in the position that allows recording. If not, slide the tab. Some cassettes have removable tabs. If the tab has been removed, cover the hole with adhesive tape (☞ pg. 10).
Recording does not start.	• The camcorder Power Switch has not been set to "CAMERA" ("AUTO" or "PRO".) (☞ pg. 14).
Animation or Time-Lapse is not available.	• Before recording in the Animation mode at the very beginning of a tape, set the camcorder to the Recording mode for about 5 seconds, so that the tape runs smoothly. Using the Fade-in function at this point is a good way to begin an animated program (☞ pg. 25).
PLAYBACK	
The tape is running, but there is no playback picture.	• The TV has not been set to its VIDEO mode or channel. • If A/V connection is used, the TV's VIDEO/TV Switch has not been set to VIDEO.
Playback picture is blurred or interrupted.	• The video heads are dirty or worn out. Consult your nearest JVC dealer for head cleaning or replacement.
The counter indication is blurred during Still playback.	• This is normal.
TAPE TRANSPORT	
The tape stops during fast-forward or rewind.	• The Counter Memory Function has been activated (☞ pg. 29).
Rewinding or fast-forwarding cannot be performed.	• The tape is already fully wound on one reel or the other.

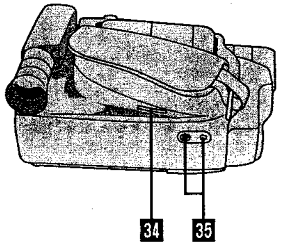
SYMPTOM	POSSIBLE CAUSE(S)
OTHER	
During recording, the indications do not appear.	• Press **DISPLAY** for longer than 1 second to make the indications appear (☞ pg. 15).
The tape will not eject.	• The battery pack is running low. • If the LCD monitor is not open over 60 degrees, the **EJECT** Switch does not function.
Some functions are not available.	• The Power Switch is set to "AUTO". • Certain combinations of modes or effects are not possible to use.
Vertical white lines appear when shooting a very bright object.	• This sometimes occurs when the contrast between the background and the object is great. It is not a defect of the camcorder.
Bright, crystal-shaped spots appear in the LCD monitor and the viewfinder.	• Sunlight is directly entering the lens. This is not a defect of the camcorder.
The rear of the LCD monitor is hot.	• The light used to illuminate the LCD monitor causes it to be hot. Close the LCD monitor to turn it off or set the Power Switch to "OFF", and let the unit cool down.
Colored bright spots appear all over the LCD monitor or the viewfinder.	• The LCD monitor and the viewfinder are made with high-precision technology. However, black spots or bright spots of light (red, green or blue) may appear constantly on the LCD monitor or in the viewfinder. These spots are not recorded on the tape. This is not due to any defect of the unit. (Effective dots: more than 99.99 %.)
The indicators and the picture color on the LCD monitor are not clear.	• This may occur when the surface or the edge of the LCD monitor is pressed.
The LCD monitor, the viewfinder and the lens have become dirty (ex. fingerprints).	• Wipe them gently with a soft cloth. Gently wipe in a semicircular motion, as wiping strongly spreads the stain and it won't come out easily.
The picture is blurred in the Quick Review or Retake mode.	• This is normal while recording in the EP mode. Some noise may be present while recording in the SP mode (☞ pg. 12).
An error number (i.e. E03) appears.	• Turn the camcorder's power off, then disconnect the power source. After a few minutes, try turning the power on again. If the error number still appears in the viewfinder, consult your nearest JVC dealer.
The image is out of focus.	• The diopter needs to be adjusted (☞ pg. 13). • The scene being shot is adversely affecting the operation of Auto Focus (☞ pg. 26).
The date and time displays disappear.	• If you remove the power source from the camcorder while the power is on, all settings and selections are erased. Make sure to turn the camcorder's power off before disconnecting the power source.
The wrong date and time are displayed/recorded.	• If you have not performed Date/Time Setting (☞ pg. 11), the date and time are not displayed/recorded correctly. Be sure that Date/Time setting is carried out.
Even though the lens cover is open, the Lens Cover Warning indicator blinks.	• The Lens Cover Warning indicator may blink when the camcorder is used in dark areas, regardless of the position of the lens cover.

INDEX Controls, Connectors And Indicators









Controls

① Diopter Adjustment Control	☞ pg. 13
② Lens Cover Open/Close Ring	☞ pg. 14
③ 5-Second Recording Button [5 SEC. REC]	☞ pg. 17
④ • Power Zoom Lever [T/W]	☞ pg. 16
• Speaker Volume Control [VOL.]	☞ pg. 28
⑤ • Picture Stabilizer Button [P.STABILIZER]	☞ pg. 16
• Time Base Corrector Button	☞ pg. 29
⑥ Program AE Button [P.AE]	☞ pg. 19
⑦ Fade/Wipe Button [EFFECT]	☞ pg. 18
⑧ • Retake Rewind Button [RETAKE R]	☞ pg. 17
• Quick Review Button [▣ R]	☞ pg. 17
• Rewind Button [REW]	☞ pg. 28
⑨ • Retake Forward Button [RETAKE F]	☞ pg. 17
• Fast-Forward Button [FF]	☞ pg. 28
⑩ Stop Button [STOP]	☞ pg. 28
⑪ Play/Pause Button [PLAY/PAUSE]	☞ pg. 28
⑫ • Select Wheel [PUSH]	☞ pg. 20
• Bright Dial [BRIGHT]	☞ pg. 14, 28
⑬ MENU/DISPLAY Button	☞ pg. 15, 20
⑭ • Recording Mode Button [SP/EP]	☞ pg. 12
• Counter Reset/Memory Button [COUNTER R/M]	☞ pg. 29
⑮ EJECT Switch	☞ pg. 10
⑯ Recording Start/Stop Button	☞ pg. 14
⑰ Power Switch [PLAY, OFF, AUTO, PRO.]	☞ pg. 14, 28
⑱ Battery Release Switch [BATTERY RELEASE]	☞ pg. 9
⑲ PUSH Button	☞ pg. 10

Connectors

⓴ DC IN Connector	☞ pg. 9

The connectors ㉑ to ㉓ are located beneath the cover.

㉑ Video Output Connector	☞ pg. 30
㉒ Audio Output Connector	☞ pg. 30

㉓ J Terminal [JLIP (Joint Level Interface Protocol) Connector]
- It is used to connect the camcorder to a device such as a personal computer. For further details consult your nearest JVC dealer.
- JLIP-controlled editing from camcorder to VCR is not possible if the VCR is not equipped with a J terminal.

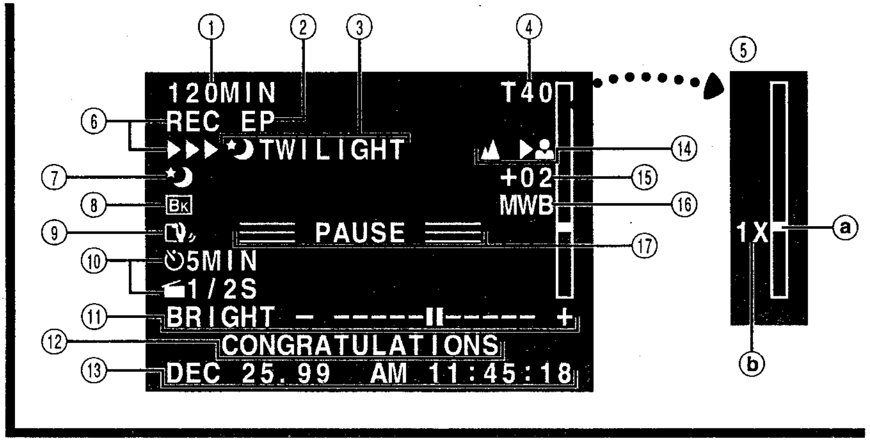
Indicators

[24] Power Lamp	☞ pg. 14

Other Parts

25 Battery Pack Mount	☞ pg. 9
26 Viewfinder	☞ pg. 13
27 Grip Strap	☞ pg. 13
28 Camera sensor Be careful not to cover this area; a sensor necessary for shooting is built-in here.	
29 Microphone For use when recording.	
30 Eyepiece	☞ pg. 33
31 Speaker	☞ pg. 28
32 LCD Monitor	☞ pg. 15
33 Shoulder Strap Eyelets	☞ pg. 13
34 Clock Battery Slot	☞ pg. 10
35 Tripod Mounting Socket	☞ pg. 13

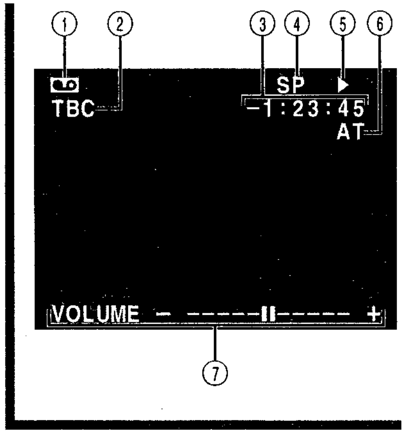
Indications During Recording



① Tape Remaining Time .... ☞ pg. 15
Blinks when a tape is about to reach its end.
② Recording Mode Indicator (SP/EP) .... ☞ pg. 12
③,⑦ Program AE Indicator .... ☞ pg. 19
Displayed at ③ for approx. 2 seconds when Program AE with special effects is switched from one mode to another by pressing **P.AE.**, then only the indicator remains at ⑦.
③,⑧ Fade/Wipe-Standby Indicator .... ☞ pg. 18
Displayed at ③ for approx. 2 seconds when the Fade/Wipe is switched from one effect to another by pressing **EFFECT**, then only the indicator remains at ⑧.
④ Tape Length Indicator .... ☞ pg. 12
⑤ Zoom Indicator Bar .... ☞ pg. 16
ⓐ Zoom Level Indicator
ⓑ Approximate Zoom Ratio

⑥ Recording Indicator .... ☞ pg. 14
⑨ Picture Stabilizer Indicator .... ☞ pg. 16
⑩ • Interval Timer/Recording Time
Indicator .... ☞ pg. 25
• 5 Sec. Rec Mode Indicator .... ☞ pg. 17
⑪ Bright Level Indicator .... ☞ pg. 14
⑫ Instant Title Display .... ☞ pg. 23
⑬ Date/Time Display .... ☞ pg. 23
⑭ Focus Indicator .... ☞ pg. 26
⑮ Exposure Control Level Counter .... ☞ pg. 24
⑯ White Balance Mode Indicator .... ☞ pg. 27
⑰ Record–Standby Mode Indicator .... ☞ pg. 14

Indications During Playback



① Cassette Indicator
Displayed when a tape is loaded.
② TBC Indicator .... ☞ pg. 29
③ Tape Counter .... ☞ pg. 29
④ Recording Mode Indicator (SP/EP) .... ☞ pg. 12
⑤ Tape Running Indicator
▶ : Playback
▶▶ : Fast-Forward/Shuttle Search
◀◀ : Rewind/Shuttle Search
❚❚ : Pause
⑥ Tracking Indicator .... ☞ pg. 29
⑦ • BRIGHT: Bright Level Indicator .... ☞ pg. 28
• VOLUME: Speaker Volume
Indicator .... ☞ pg. 28

Warning Indications

Indications	Function
🔋	**Displays the battery remaining power.** **Remaining power level: high. It does not necessarily mean that the battery pack is fully charged.——— ▮▮▮ → ▮▮ → ▮ → ▭** **Remaining power level: exhausted** **As the battery power comes close to nil, the battery indicator ▭ blinks (battery power warning).** **When the battery power is exhausted, power turns off automatically.**
📼	**Blinks when no cassette is loaded, or when the Erase Protection tab is not in the position that allows recording. (☞ pg. 10)**
⌚	**Blinks for approx. 10 seconds when the power is turned on. This display also blinks when the clock (lithium) battery is either not installed or has discharged. Install or replace the old battery with a new one. (☞ pg. 10)**
TAPE END	**Appears when the tape ends during recording, playback or fast-forward. (☞ pg. 15)**
LENS COVER	**Blinks for approx. 5 seconds when the camcorder is turned on with the lens cover closed. (☞ pg. 14)**
CONDENSATION **PLEASE WAIT**	**These 2 warnings appear alternately every 3 seconds if condensation occurs. In this case, all functions except tape eject and power on/off are disabled. Turn the unit off (without removing the power supply), wait a few minutes for the warnings to clear, and turn it on again.**
TAPE HEAD IS DIRTY **USE CLEANING CASSETTE**	**These 2 warnings appear alternately every 3 seconds if dirt is detected on the heads during recording. In this case, use an optional cleaning cassette. If the warning remains after cleaning, consult your nearest JVC dealer.**
E01 — E06 **SAFEGUARD FUNCTION HAS BEEN ACTIVATED** **REATTACH BATTERY**	**The error indications (E01 — E06) show what type of malfunction has occured. If an error indication and warning appear, turn the unit off, remove the power supply (battery, etc.) and wait a few minutes for them to clear. When it does, you can resume using the camcorder. If the indication remains, consult your nearest JVC dealer.**

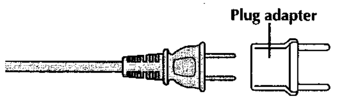
When using the AC Power Adapter/Charger in areas other than the USA

- The provided AC Power Adapter/Charger features automatic voltage selection in the AC range from 110 V to 240 V.

USING HOUSEHOLD AC PLUG ADAPTER

In case of connecting the unit's power cord to an AC wall outlet other than American National Standard C73 series type use an AC plug adapter, called a "Siemens Plug", as shown.

For this AC plug adapter, consult your nearest JVC dealer.



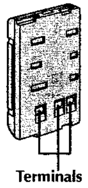
General Battery Precautions

- When the C-P6U or C-P7U (cassette adapter) is not functioning even when correctly operated, the battery is exhausted. Replace it with a fresh one.
- Use only the following battery:
  C-P6U or C-P7U .... AA (R6) size

Please make note of the following rules for battery use. When misused, the battery can leak or explode.

1. Refer to the C-P6U/C-P7U instructions when replacing the battery.
2. **Do not** expose the battery to excessive heat as it can leak or explode.
3. **Do not** dispose of the battery in a fire.
4. Remove the battery from the unit if it is to be stored for an extended period to avoid battery leakage which can cause malfunctions.

Battery Packs



The battery packs are nickel-cadmium or nickel metal-hydride batteries. Before using the supplied battery pack or an optional battery pack, be sure to read the following cautions:

1. To avoid hazard . . .

... **do not** burn.
... **do not** short-circuit the terminals.
... **do not** modify or disassemble.
... use only specified chargers.

2. To prevent damage and prolong service life . . .

... **do not** subject to unnecessary shock.
... avoid repeated charging without fully discharging.
... charge in an environment where temperatures are within the tolerances shown in the chart below. This is a chemical reaction type battery—cooler temperatures impede chemical reaction, while warmer temperatures can prevent complete charging.
... store in a cool, dry place. Extended exposure to high temperatures will increase natural discharge and shorten service life.
... avoid prolonged uncharged storage.
... remove from charger or powered unit when not in use, as some machines use current even when switched off.

NOTES:

- *It is normal for the battery pack to be warm after charging, or after use.*
  Temperature Range Specifications
  Charging .... 10°C to 35°C (50°F to 95°F)
  Operation .... 0°C to 40°C (32°F to 104°F)
  Storage .... –10°C to 30°C (14°F to 86°F)
- *Recharging time is based on room temperature of 20°C (68°F.)*
- *The lower the temperature, the longer recharging takes.*

Cassettes

To properly use and store your cassettes, be sure to read the following cautions:

1. During use . . .

... make sure the cassette bears the VHS-C mark.
... be aware that recording onto prerecorded tapes automatically erases the previously recorded video and audio signals.
... make sure the cassette is positioned properly when inserting.
... do not load and unload the cassette repeatedly without allowing the tape to run at all. This slackens the tape and can result in damage.
... do not open the front tape cover. This exposes the tape to fingerprints and dust.

2. Store cassettes . . .

... away from heaters or other heat sources.
... out of direct sunlight.
... where they won't be subject to unnecessary shock or vibration.
... where they won't be exposed to strong magnetic fields (such as those generated by motors, transformers or magnets).
... vertically, in their original cases.

Main Unit

1. For safety, DO NOT . . .

... open the camcorder's chassis.
... disassemble or modify the unit.
... short-circuit the terminals of the battery pack. Keep it away from metallic objects when not in use.
... allow inflammables, water or metallic objects to enter the unit.
... remove the battery pack or disconnect the power supply while the power is on.
... leave the battery pack attached when the camcorder is not in use.

2. Avoid using the unit . . .

... in places subject to excessive humidity or dust.
... in places subject to soot or steam such as near a cooking stove.
... in places subject to excessive shock or vibration.
... near a television set.
... near appliances generating strong magnetic or electric fields (speakers, broadcasting antennas, etc.).
... in places subject to extremely high (over 40°C or 104°F) or extremely low (under 0°C or 32°F) temperatures.

3. DO NOT leave the unit . . .

... in places of over 50°C (122°F).
... in places where humidity is extremely low. (below 35%) or extremely high (above 80%).
... in direct sunlight.
... in a closed car in summer.
... near a heater.

4. To protect the unit, DO NOT . . .

... allow it to become wet.
... drop the unit or strike it against hard objects.
... subject it to shock or excessive vibration during transportation.
... keep the lens directed at extremely bright objects for long periods.
... direct the eyepiece of the viewfinder at the sun.
... carry it by holding the viewfinder or the LCD monitor. Be sure to hold the main unit with both hands or use the grip.
... swing it excessively when using the shoulder strap.

LCD Monitor

1. To prevent damage to the LCD monitor, DO NOT . . .

... push it strongly or apply any shocks.
... place the camcorder with the LCD monitor on the bottom.

2. To prolong service life . . .

... avoid rubbing it with coarse cloth.

3. Be aware of the following phenomena for LCD monitor use. These are not malfunctions:

- While using the camcorder, the surface around the LCD monitor and/or the back of the LCD monitor may heat up.
- If you leave power on for a long time, the surface around the LCD monitor becomes hot.

About moisture condensation . . .

- You may have observed that pouring a cold liquid into a glass will cause drops of water to form on the glass' outer surface. This same phenomenon occurs on the head drum of a camcorder when it is moved from a cool place to a warm place, after heating a cold room, under extremely humid conditions or in a place directly subjected to the cool air from an air conditioner.
- Moisture on the head drum can cause severe damage to the video tape, and can lead to internal damage to the camcorder itself.

Serious malfunctioning

If malfunctioning occurs, stop using the unit immediately and consult your local JVC dealer.

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SPECIFICATIONS

Camcorder

General

Format : VHS NTSC standard
Power source : DC 6.0 V ⎓
Power consumption
LCD monitor off, viewfinder on : 4.2 W
LCD monitor on, viewfinder off : 4.6 W
LCD monitor on, viewfinder on : 5.2 W
Signal system : NTSC-type
Video recording system
Luminance : FM recording
Color : Converted sub-carrier direct recording
Conforms to VHS standard
Cassette : VHS C cassette
Tape speed
SP : 33.35 mm/sec. (1-5/16 ips)
EP : 11.12 mm/sec. (7/16 ips)
Recording time (max.)
SP : 40 minutes
EP : 120 minutes (with TC-40)
Operating temperature : 0°C to 40°C (32°F to 104°F)
Operating humidity : 35% to 80%
Storage temperature : –20°C to 50°C (–4°F to 122°F)
Weight : Approx. 880 g (2.0 lbs)
Dimensions : 198 (W) x 119 (H) x 99 (D) mm (7-13/16" x 4-11/16" x 3-15/16") (with the LCD monitor closed and with the viewfinder fully tilted downward)
Pickup : 1/4" format CCD
Lens : F1.6, f = 3.9 to 62.4 mm, 16:1 power zoom lens with auto iris and macro control, filter diameter 40.5 mm
Viewfinder : Electronic viewfinder with 0.5" black/white CRT
White balance adjustment : Auto/Manual adjustment
LCD monitor : 2.5" diagonally measured, LCD panel/TFT active matrix system
Speaker : Monaural

Connectors

JLIP : ø3.5 mm, 4-pole, mini-head jack (compatible with RC-5325 plug)
Video : 1 Vp-p, 75 Ω unbalanced, analog output (via Video output connector)
Audio : –8 dBs, 1 kΩ analog output (via Audio output connector)

AC Power Adapter/Charger AA-V16U

Power requirement
U.S.A. and Canada : AC 120 V∿, 60 Hz
Other countries : AC 110 V to 240 V∿, 50/60 Hz
Power consumption : 23 W
Output
Charge : DC 8.5 V ⎓, 1.3 A
VTR : DC 6.3 V ⎓, 1.8 A
Charging system : Constant current, peak detection, timer controlled
Dimensions : 125 (W) x 42 (H) x 68 (D) mm (4-15/16" x 1-11/16" x 2-11/16")
Weight : Approx. 270 g (0.6 lbs)

Cassette Adapter C-P7U

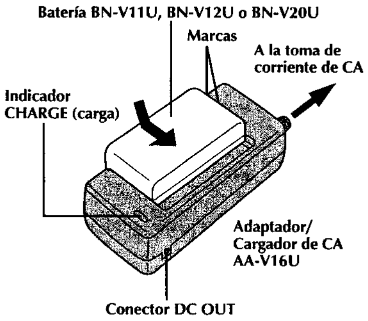
Dimensions : 188 (W) x 25 (H) x 104 (D) mm (7-7/16" x 1" x 4-1/8")
Weight : Approx. 240 g (0.53 lbs)
Accessory : "AA (R6)"-size battery x 1

Optional Accessories

- **Battery Packs BN-V12U, BN-V20U, BN-V856U**
- **Car Battery Charger BH-V3U**
- **Battery Charger BH-VC10U**
- **Audio/Video Cable**
- **Car Battery Cord AP-V7U**
- **Compact VHS (VHS C) Cassettes TC-40/30/20**
- **Active Carrying Bag CB-V7U**

Some accessories are not available in some areas. Please consult your nearest JVC dealer for details on accessories and their availability.

Specifications shown are for SP mode unless otherwise indicated. E & O.E. Design and specifications subject to change without notice.


Batería BN-V11U, BN-V12U o BN-V20U
Marcas
A la toma de corriente de CA
Indicador CHARGE (carga)
Adaptador/ Cargador de CA AA-V16U
Conector DC OUT

Batería	Tiempo de carga
BN-V11U	aprox. 1 h 10 min
BN-V12U (opcional)	aprox. 1 h 10 min
BN-V20U (opcional)	aprox. 1 h 50 min

Alimentación

Esta cámara de video posee un sistema de alimentación de 3 vías que le permite seleccionar la fuente de alimentación más apropiada. No utilice las unidades de alimentación suministradas con otro equipo.

CARGA DE LA BATERIA

1 Asegúrese de desconectar el cable CC de la cámara de video del adaptador/cargador de CA. Conecte el cable de alimentación de CA del cargador a una toma de corriente.

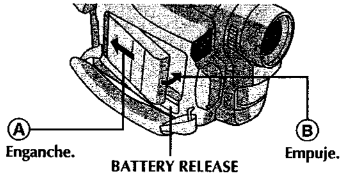
2 Alinee las marcas y deslice la batería en la dirección de la flecha hasta que quede bloqueada en su lugar. El indicador CHARGE comienza a destellar para indicar que se ha iniciado la carga.

3 Cuando el indicador CHARGE deja de destellar y permanece encendido, la carga ha terminado. Deslice la batería en el sentido opuesto al de la flecha y retírela. Recuerde de desconectar el cable de alimentación del adaptador/cargador de CA de la toma de corriente alterna.

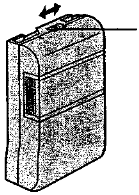
ATENCION:
La carga de la batería sin que esté completamente agotada afectará a la capacidad original de ésta. Efectué el procedimiento abajo para descargar totalmente la batería antes de recargarla.

1. Coloque la batería en la cámara de video y asegúrese que el cassette esté ***no*** colocado, luego ajuste el conmutador de alimentación en "AUTO" o "PRO.".
2. La alimentación de la camára de video se desconectará automáticamente cuando la descarga termina.

Cuando usted no vaya a usar una batería por un período prolongado, asegúrese de descargarla totalmente antes de almacenarla porque dejar la batería sin que esté completamente agotada afectará su rendimiento.



ATENCION:
Antes de desmontar la fuente de alimentación, asegúrese que la alimentación de la cámara de video esté desconectada. El no hacerlo puede producir un error de funcionamiento en la cámara de video.



- Se incorpora un indicador de carga sobre la batería para ayudarle a recordar si ha sido cargada o no. Los dos colores indicadores (rojo y negro), le permiten seleccionar la carga y la descarga.

USO DE LA BATERIA

Enganche el extremo a la cámara de video Ⓐ y presione la batería hasta que se trabe en el lugar Ⓑ.

- Si la batería es colocada en la posición equivocada puede ocurrir un mal funcionamiento.

Para la extracción de la batería . . .
..... deslice **BATTERY RELEASE** y extraiga la batería.

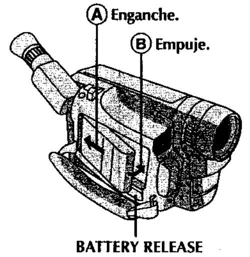
Tiempo de grabación aproximado

Batería	Monitor LCD desconectado/ visor conectado	Monitor LCD conectado/visor desconectado	Monitor LCD conectado/ visor conectado
BN-V11U	1 h 30 min	1 h 20 min	1 h 10 min
BN-V12U (opcional)	1 h 30 min	1 h 20 min	1 h 10 min
BN-V20U (opcional)	2 h 20 min	2 h 10 min	1 h 55 min
BN-V856U (opcional)	9 h 30 min	8 h 40 min	7 h 40 min

INFORMACION:
El VU-V856KIT es un juego compuesto de la batería BN-V856U y del cargador/adaptador de CA AA-V80U. Lea los manuales de instrucción del VU-V856KITU antes de utilizarlo. Es imposible cargar la batería BN-V856U utilizando el cargador/adaptador de CA suministrado. Use el cargador/ adaptador de CA AA-V80U opcional.

Si la unidad comienza a funcionar mal, deje de usarla inmediatamente y consulte a su concesionario local de JVC.

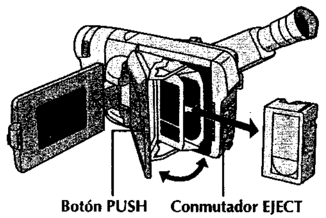
ALIMENTACION



Utilización de la batería
Enganche el lado extremo de la batería en la cámara de video Ⓐ y empuje la batería hasta que se bloquee en el lugar Ⓑ.
(Procedimiento para carga, ☞ p. 8)

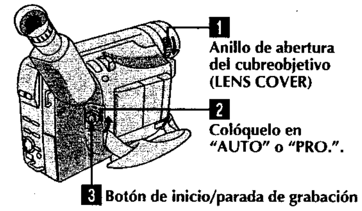
Para extraer la batería
Deslice **BATTERY RELEASE** y extraiga la batería.

INSERCION DEL CASSETTE DE VIDEO



1 Abra el monitor LCD completamente.
2 Deslice **EJECT** para abrir el portacassette.
3 Inserte cassette de video.
4 Presione **PUSH** para cerrar el portacassette.
(Por más detalles, ☞ p. 10)

FILMACION


1
Anillo de abertura del cubreobjetivo (LENS COVER)
2
Colóquelo en "AUTO" o "PRO.".
3 Botón de inicio/parada de grabación

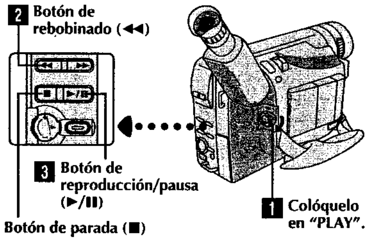
1 Gire el anillo **LENS COVER** de abertura/cierre para abrir el cubreobjetivo.
2 Adjuste el conmutador de alimentación en "AUTO" o "PRO.".
— La lámpara de alimentación se encenderá y aparecerá una imagen.
3 Presione el botón inicio/parada de grabación.
— Comenzará la grabación.

- Para detener temporariamente la grabación, presione nuevamente el botón de inicio/parada de grabación.

(Por más detalles, ☞ p. 14, 15)

- **El visor se desconecta automáticamente para ahorrar energía cuando el monitor LCD es abierto a un ángulo mayor de 60 grados.**
- **El monitor LCD se activa/desactiva cuando se lo abre/cierre a 60 grados aprox.**

REPRODUCCION


2 Botón de rebobinado (◀◀)
3 Botón de reproducción/pausa (▶/❚❚)
Botón de parada (■)
1 Colóquelo en "PLAY".

1 Ajuste el conmutador de alimentación en "PLAY".
2 Presione ◀◀.
— La cinta se detiene automáticamente al comienzo de la misma.
3 Presione ▶/❚❚.
— Comienza la reproducción y la imagen aparece.

- Presione ■ para detener la grabación.

(Por más detalles, ☞ p. 28.)

- **El visor se desconecta automáticamente para ahorrar energía cuando el monitor LCD es abierto a un ángulo mayor de 60 grados.**
- **El monitor LCD se activa/desactiva cuando se lo abre/cierre a 60 grados aprox.**

O simplemente reproduzca la cinta en un VCR de VHS utilizando el adaptador de cassette (VHS Playpak). ☞ p. 32

SECTION 1
DISASSEMBLY

1.1 SERVICE CAUTIONS

1.1.1 Precautions

1. Before disassembling/re-assembling the set as well as soldering parts, make sure to disconnect the power cable.
2. When disconnecting/connecting connectors, pay enough attention to wiring not to damage it.
3. In general, chip parts such as resistor, shorting jumpers (0-ohm resistor), ceramic capacitors, diodes, etc. can not be reused after they were once removed.
4. When installing parts, be careful not to do with other parts as well as not to damage others.
5. When removing ICs, be careful not to damage circuit patterns.
6. Tighten screws properly during the procedures. Unless specified otherwise, tighten screws at torque of 0.2 N·m (2.0 kgf·cm).

1.1.2 How to read the disassembly and assembly

(For Cabinet Parts)

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER ASSEMBLY	C1	2(S1)	–
②	UPPER CASE	C2	2(S2a),(S2b), (L1), (L2), 2(L3), (L4)	<NOTE 1>
③	COVER (VF)	C3	2(S3), (L5)	–

(1) (2) (3) (4) (5)

(1) Order of steps in Procedure
When reassembling, preform the step(s) in the reverse order. These numbers are also used as the identification (location) No. of parts Figures.

(2) Part to be removed or installed.

(3) Fig. No. showing Procedure or Part Location.

C = Cabinet
CA = Camera
D = Deck

(4) Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped or unsoldered.

P = Spring
W = Washer
S = Screw
* = Unhook, unlock, release, unplug or unsolder.
2(S3) = 2 Screws (S3)

(5) Adjustment information for installation.

1.1.3 Connection of the wires

1. Pull the connector structure upward to release the clamp when removing or inserting the flat wire cable.

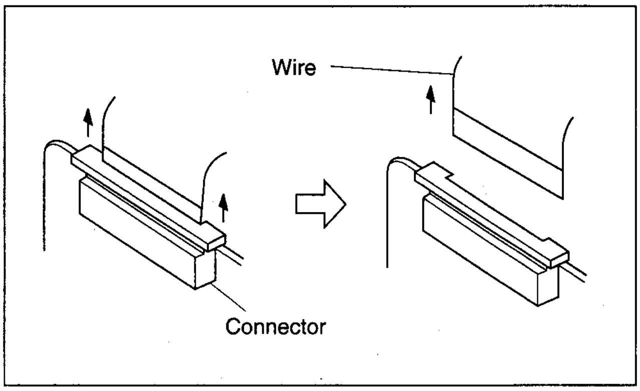
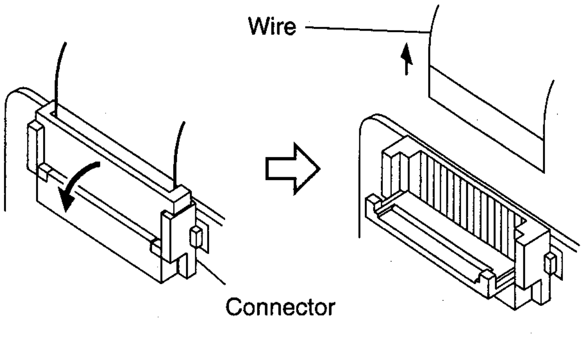


Fig. 1-1-1



NOTE: *After removing the wire, return the stopper to its original position, because it is apt to come off if it is left open.*

Fig. 1-1-2

1.2 TOOLS REQUIRED FOR ADJUSTMENTS

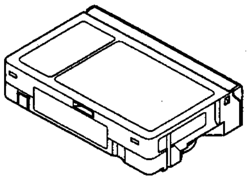
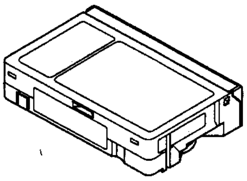
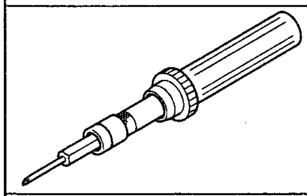
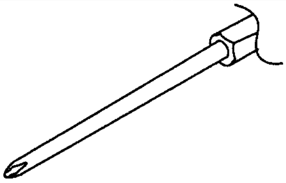
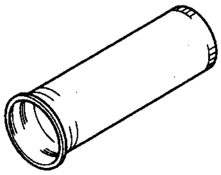
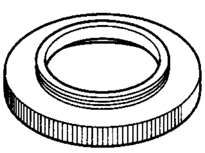
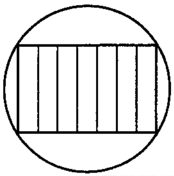
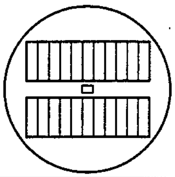
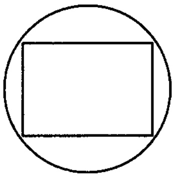
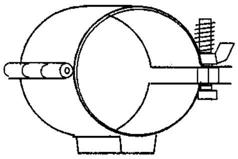
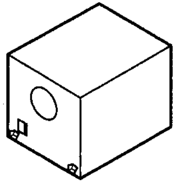
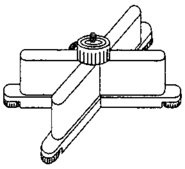
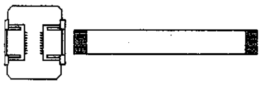
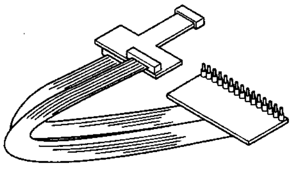
1 Alignment tape (for SP interchangeability) MHP-C	2 Alignment tape (for N. SP PB Y/C level) MHV-2C
	
3 Torque driver YTU94088	4 Bit YTU94088-003
	
5 INF adjustment lens YTU92001B	6 Conn. ring YTU92001-111
	
7 Color bar chart YTU92001-051	8 Gray scale chart YTU92001-052
	
9 White balance chart YTU92001-053	10 INF lens holder YTU94087
	
11 Light box YTU93072A-1	12 Camera stand YTU93079
	
13 Patch cord YTU93097A	14 Jig connector cable YTU93082E
	

Table 1-1-1

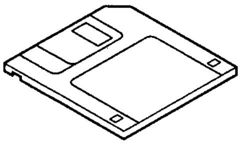
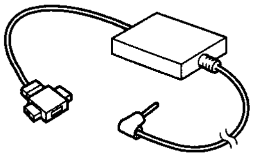
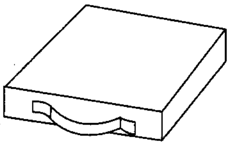
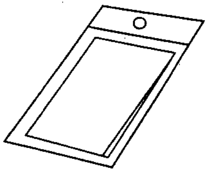
15 Service support software YTU94057-43	16 PC cable QAM0099-002
	
17 Soldering kit YTU96016B	18 Cleaning cloth KSMM-01
	

Table 1-1-2

1,2. Alignment tape
To be used for check and adjustment of interchangeability of the mechanism.
(Video: Color bar signal, Audio: Non-signal)

3. Torque driver
Be sure to use to fastening the mechanism and exterior parts because those parts must strictly be controlled for tightening torque.

4. Bit
This bit is slightly longer than those set in conventional torque drivers.

5. INF adjustment lens
To be used for adjustment of the camera system.

6. Conn. ring
The connector ring to attach the INF. lens to the head of the OP lens.

7. Color bar chart
To be used for adjustment of the camera system.

8. Gray scale chart
To be used for adjustment of the camera system.

9. White balance chart
To be used for adjustment of the camera system. (for white balance adjustment)

10. INF lens holder
To be used together with the camera stand (11) for operating the VideoMovie in the stripped-down condition such as the status without the exterior parts or for using commodities that are not yet conformable to the interchangeable ring.

11. Light box
To be used for adjustment of the camera system.

12. Camera stand
To be used together with the INF adjustment lens holder.

13. Patch cord
To be used to connect electrical parts, P.C. boards, etc. for servicing.

14. JIG connector cable
Connected to CN25 of the main board and used for measuring error rates, etc.

15. Service support software
To be used for adjustment with a personal computer.

16. PC cable
To be used to connect the VideoMovie and a personal computer with each other when a personal computer is used for adjustment.

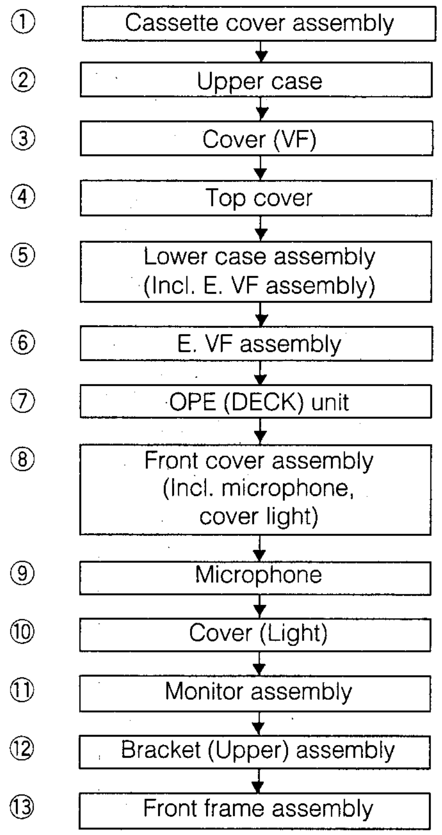
17. Soldering kit
Thin head is made so that it can be inserted into small spaces.

18. Cleaning cloth
Recommended cleaning cloth to wipe down the video heads, mechanism (tape transport system), optical lens surface.

1.3 DISASSEMBLY/ASSEMBLY OF CABINET PARTS

1.3.1 Disassembly flow chart

This flowchart indicates the disassembly step for the cabinet parts and board assembly in order to gain access to item(s) to be serviced. When reassembling, perform the step(s) in reverse order. Bend, route and dress the flat cables as they were originally.


① Cassette cover assembly
② Upper case
③ Cover (VF)
④ Top cover
⑤ Lower case assembly (Incl. E. VF assembly)
⑥ E. VF assembly
⑦ OPE (DECK) unit
⑧ Front cover assembly (Incl. microphone, cover light)
⑨ Microphone
⑩ Cover (Light)
⑪ Monitor assembly
⑫ Bracket (Upper) assembly
⑬ Front frame assembly

1.3.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	CASSETTE COVER ASSEMBLY	C1	2(S1)	–
②	UPPER CASE	C2	2(S2a), (S2b),(L2a), (L2b) (L2c)	<NOTE 1>
③	COVER (VF)	C3	2(S3), (L3)	–
④	TOP COVER	C4	2(S4),2(L4a), 2(L4b), 2(L4c)	<NOTE 2>
⑤	LOWER CASE ASSEMBLY (INCL. E.VF ASSEMBLY)	C5	9(S5a), 3(S5b), (L9), (L10) (L5a), (L5b), (L5c) *CONNECTOR Ⓐ, Ⓑ CAP (RCA JACK) CAP (REAR JACK)	<NOTE 3>
⑥	E. VF ASSEMBLY	C6	2(S6)	–
⑦	OPE (DECK) UNIT	C7	2(S7), (L7a), (L7b), (L7c) *CONNECTOR Ⓒ, Ⓓ	<NOTE 3>
⑧	FRONT COVER ASSEMBLY (INCL. MIC COVER LIGHT	C8	(S8a), (S8b), (L8a), (L8b) *CONNECTOR Ⓔ	<NOTE 3>
⑨	MICROPHONE		(S8c)	–
⑩	COVER (LIGHT)		2(L8c)	–
⑪	MONITOR ASSEMBLY	C9	4(S9) *CONNECTOR Ⓕ	<NOTE 3>
		C10	2(S10a), 4(S10b), (L10a) (L10b),(L10c), (L10d), (L10e)	<NOTE 4>
		C11	2(L11a), (L11b) *CONNECTOR Ⓖ, Ⓗ, Ⓙ	<NOTE 3>
		C12	3(S12a), (S12b), 2(L12a)	<NOTE 5> <NOTE 6> <NOTE 7>
⑫	BRACKET (UPPER) ASSEMBLY	C13	3(S13)	–
⑬	FRONT FRAME ASSEMBLY	C14	2(S14)	–

List of Abbreviations:
2(S1)=2 screws (S1)
2(L4a)=4 Locking Tabs (L4a)

Reference Notes:

<NOTE 1>
Pay heed to the FPC wire not to damage it.

<NOTE 2>
Pay heed to the FPC wire under the top cover not to get it broken.

<NOTE3>
Destination of connectors

Note: ***Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.***

⟷ : Board to Board connector
⟺ : Flat wire
↔ : Wire

Con-nector	No. of Pins	Connector		
Ⓐ	2	LITHIUM	↔	MAIN CN26
Ⓑ	5	E.VF	↔	MAIN CN12
Ⓒ	10	OPE (DECK) UNIT	⟺	MAIN CN13
Ⓓ	2	SPEAKER	↔	MAIN CN27
Ⓔ	2	MIC	↔	MAIN CN8
Ⓕ	27	MONITOR ASSEMBLY	⟺	MAIN CN16
Ⓖ	24	MONITOR CN7502	⟺	LCD MODULE
Ⓗ	2	MONITOR CN7503	↔	BACK LIGHT
Ⓙ	24	MONITOR CN7501	⟺	T. HINGE

<NOTE 4>
For removing the cover, first turn the hinge at an angle of 90° as shown in the figure and then remove the cover.

<NOTE 5,6>
(1) The FPC assembly should be winded around the hinge assembly by two and half turns so that the wire to be connected to the mnonitor board assembly is positioned inside.
(2) The upper and lower hinge covers should be mounted so carefully the any wire is not caught into either of the covers.

<NOTE 7>
When reassembling, take care of wire arrangement.

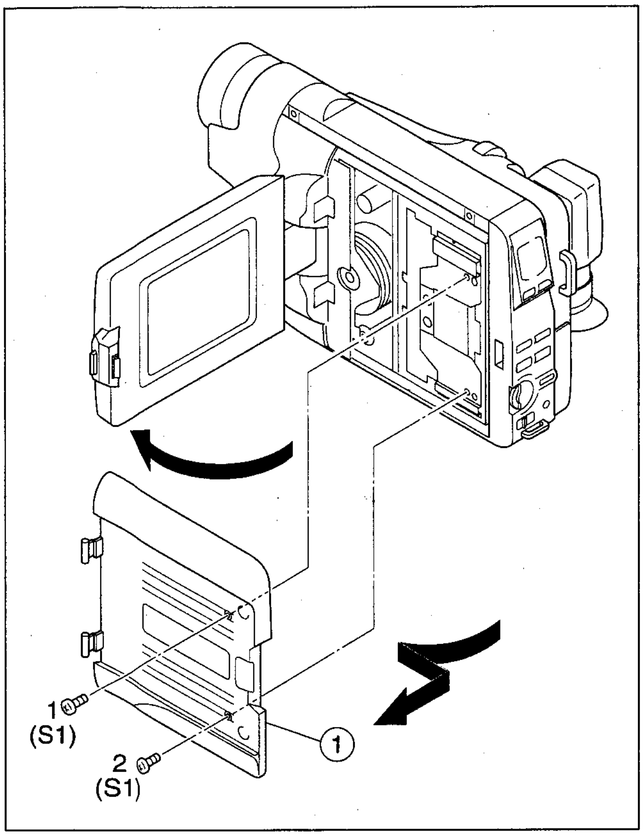


Fig. C1

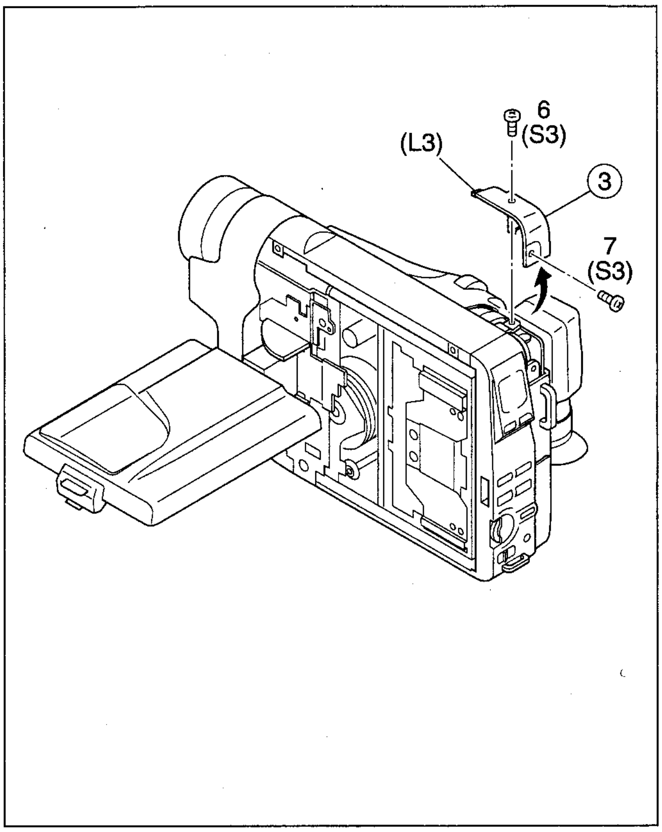


Fig. C3

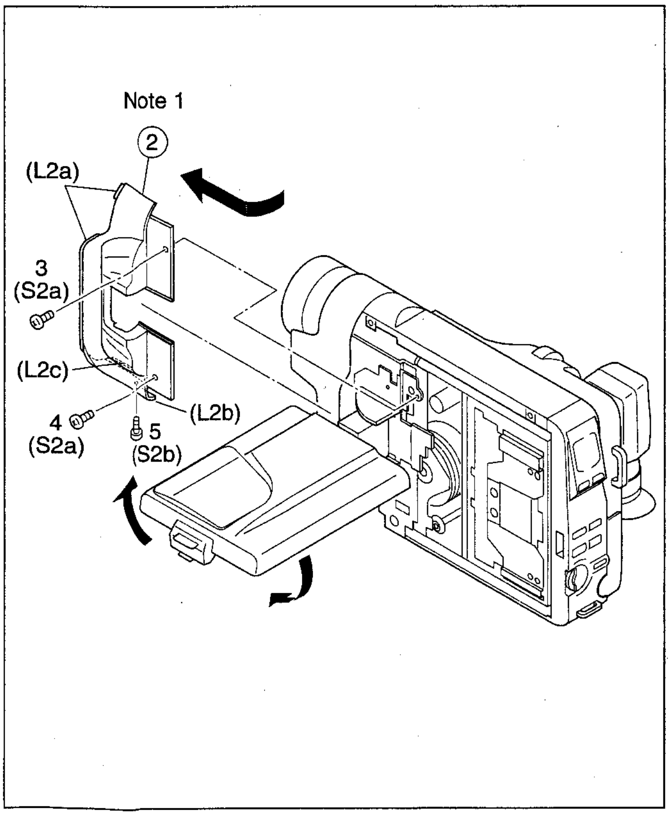

Note 1
②
(L2a)
3
(S2a)
(L2c)
4
(S2a)
5
(S2b)
(L2b)

Fig. C2

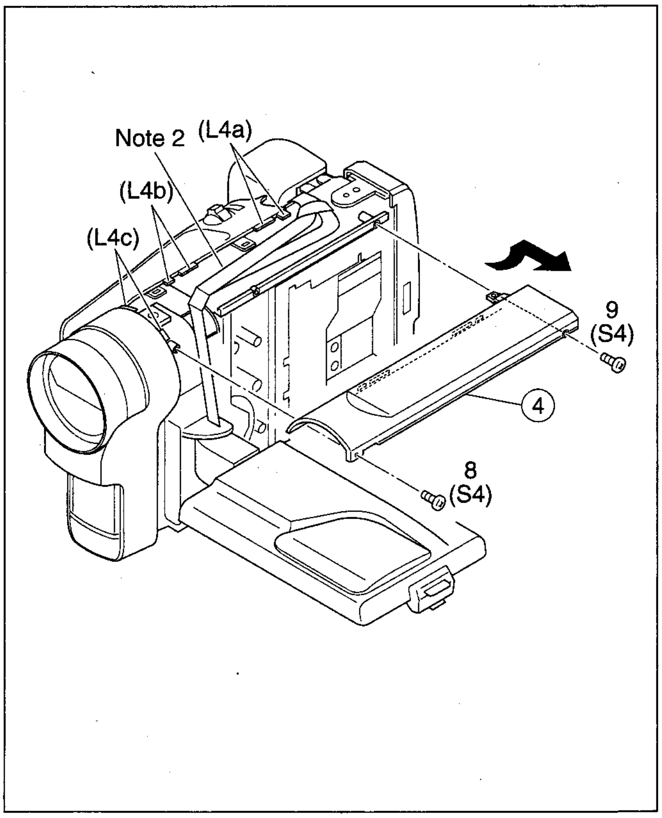

Note 2
(L4a)
(L4b)
(L4c)
9
(S4)
④
8
(S4)

Fig. C4

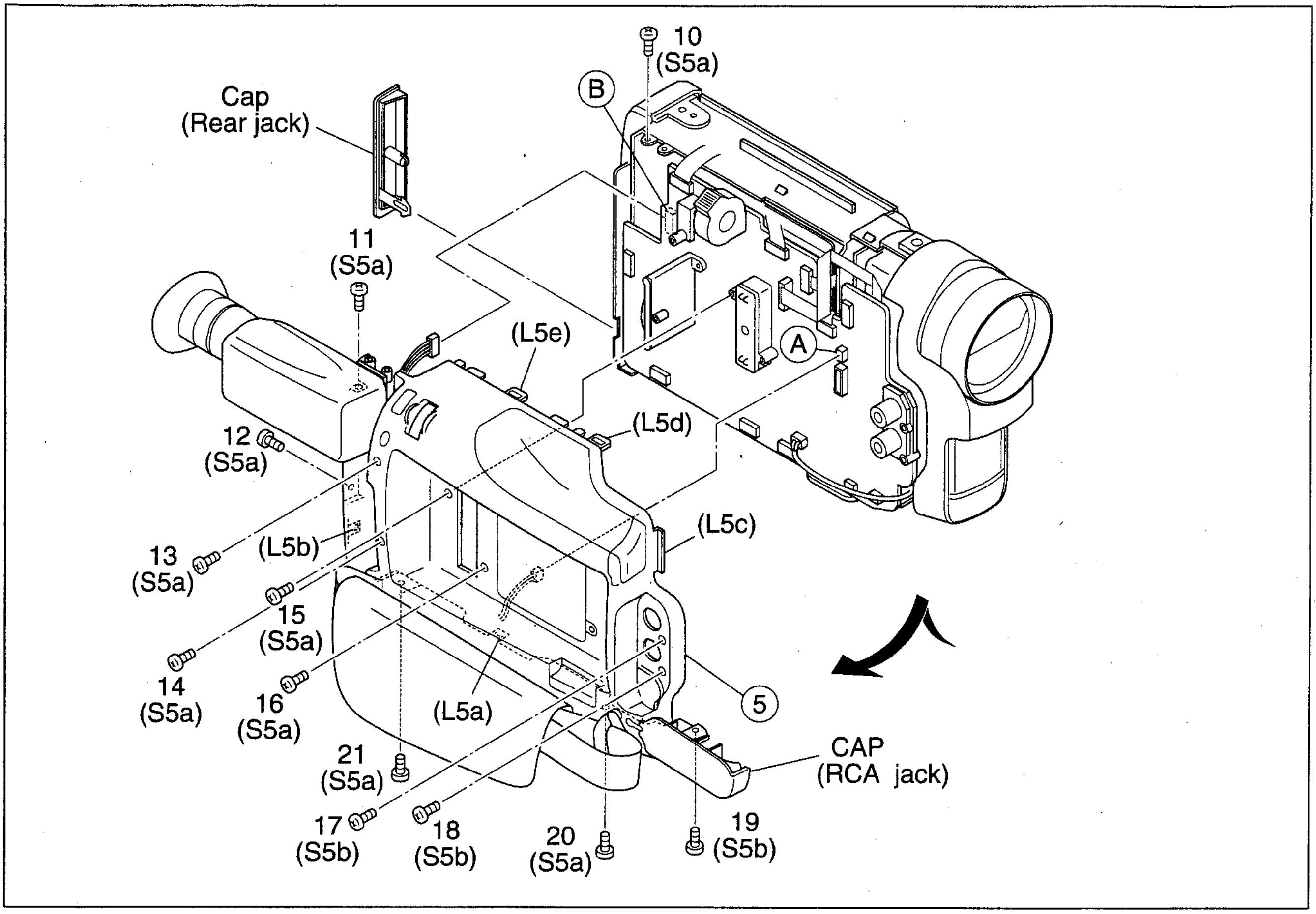

10
(S5a)
Cap
(Rear jack)
B
11
(S5a)
(L5e)
A
(L5d)
12
(S5a)
(L5c)
13
(S5a)
(L5b)
15
(S5a)
14
(S5a)
16
(S5a)
(L5a)
5
21
(S5a)
CAP
(RCA jack)
17
(S5b)
18
(S5b)
20
(S5a)
19
(S5b)

Fig. C5

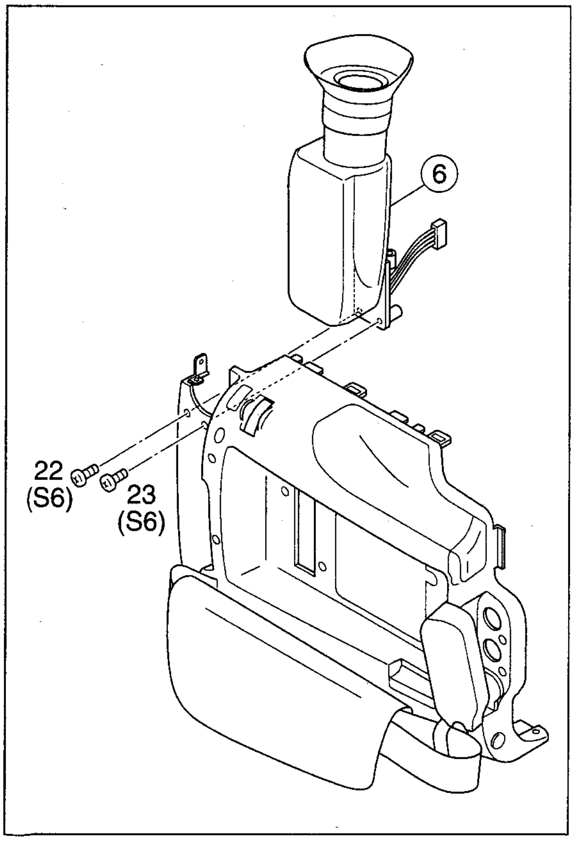


Fig. C6

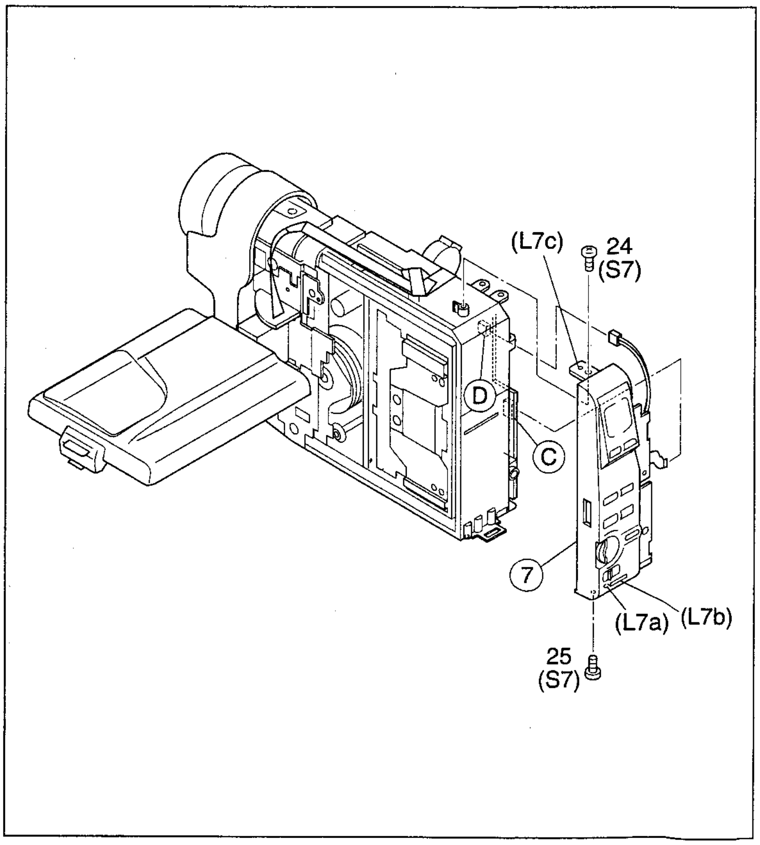

(L7c)
24
(S7)
D
C
7
(L7a)
(L7b)
25
(S7)

Fig. C7

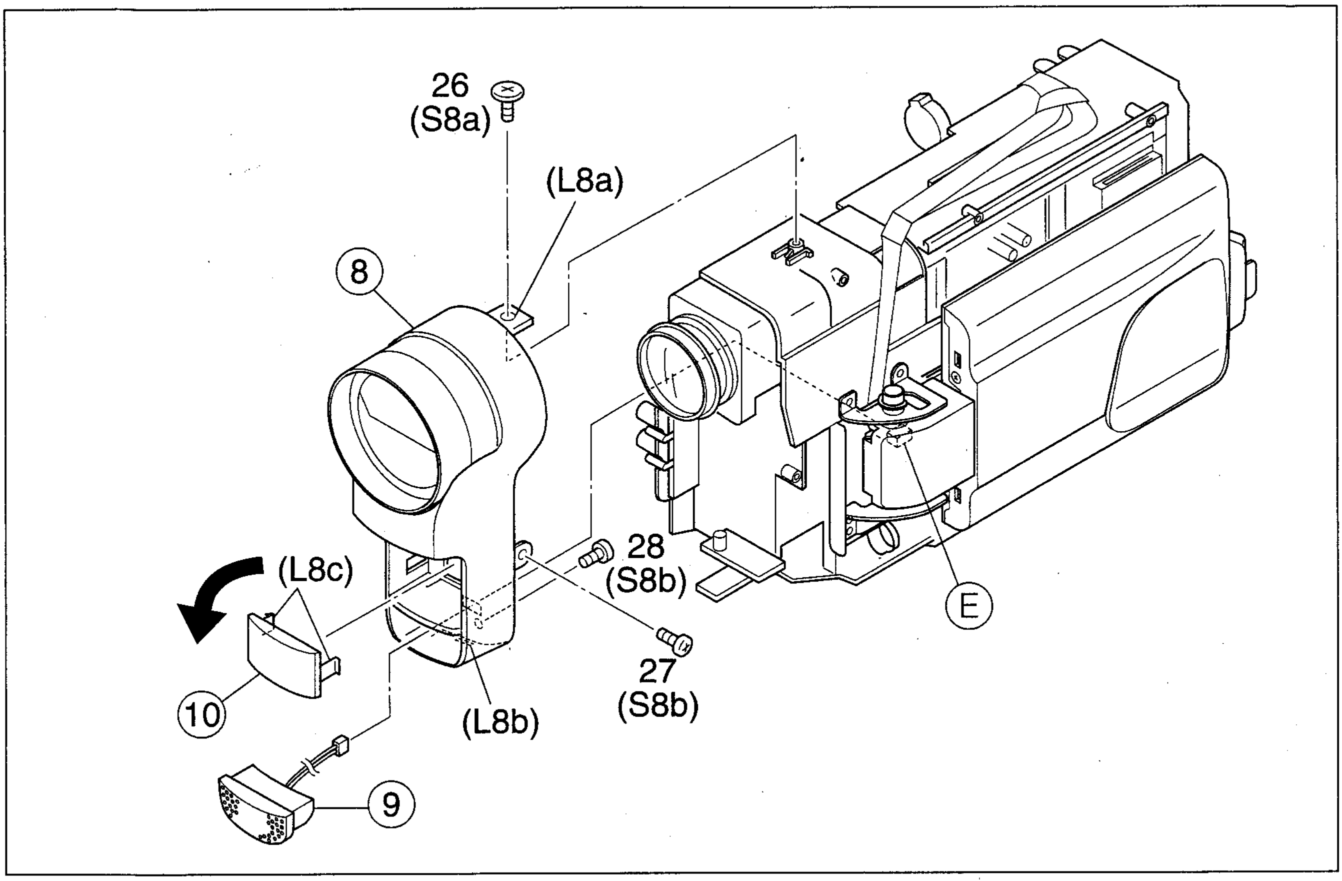

26
(S8a)
(L8a)
8
28
(S8b)
(L8c)
E
27
(S8b)
10
(L8b)
9

Fig. C8

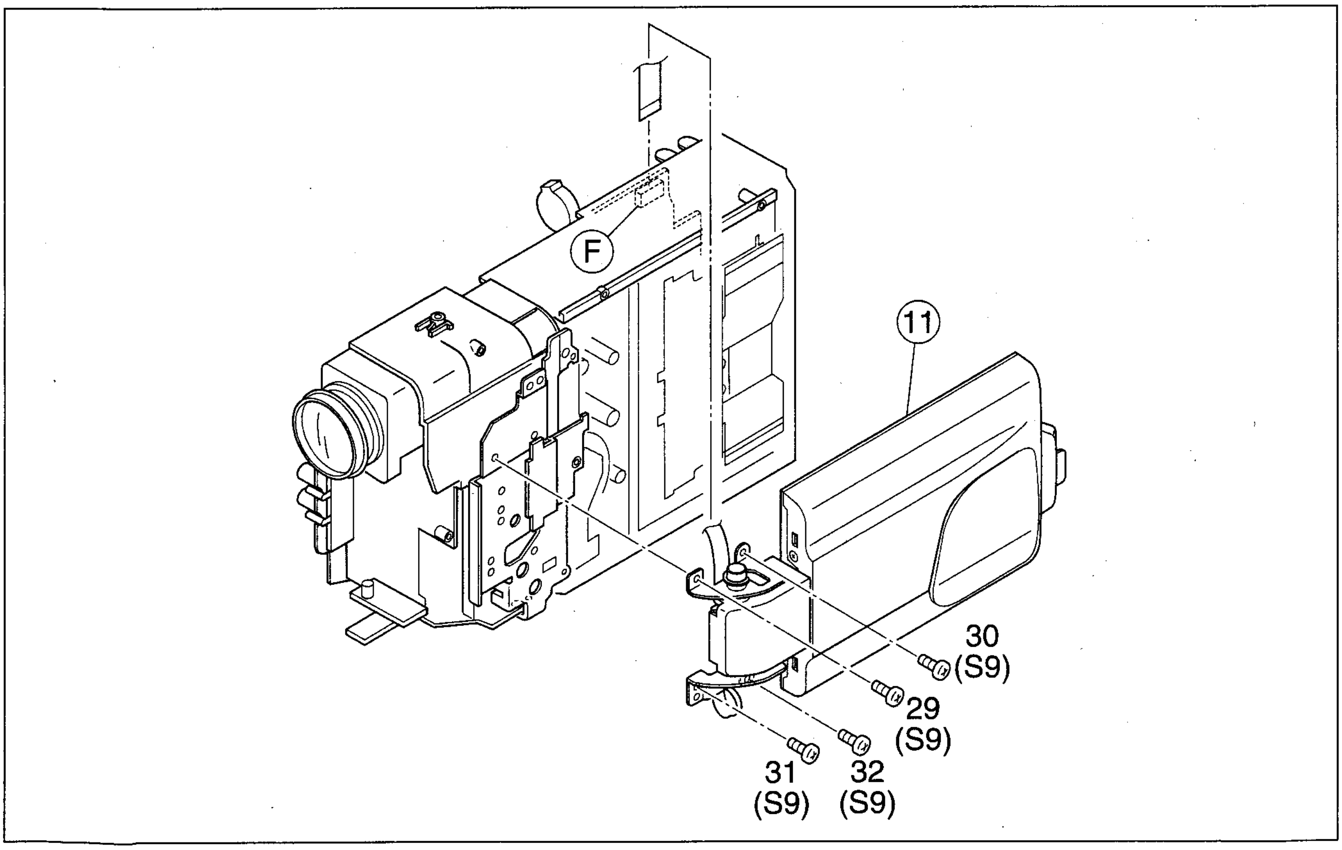

F
11
30
(S9)
29
(S9)
31
(S9)
32
(S9)

Fig. C9

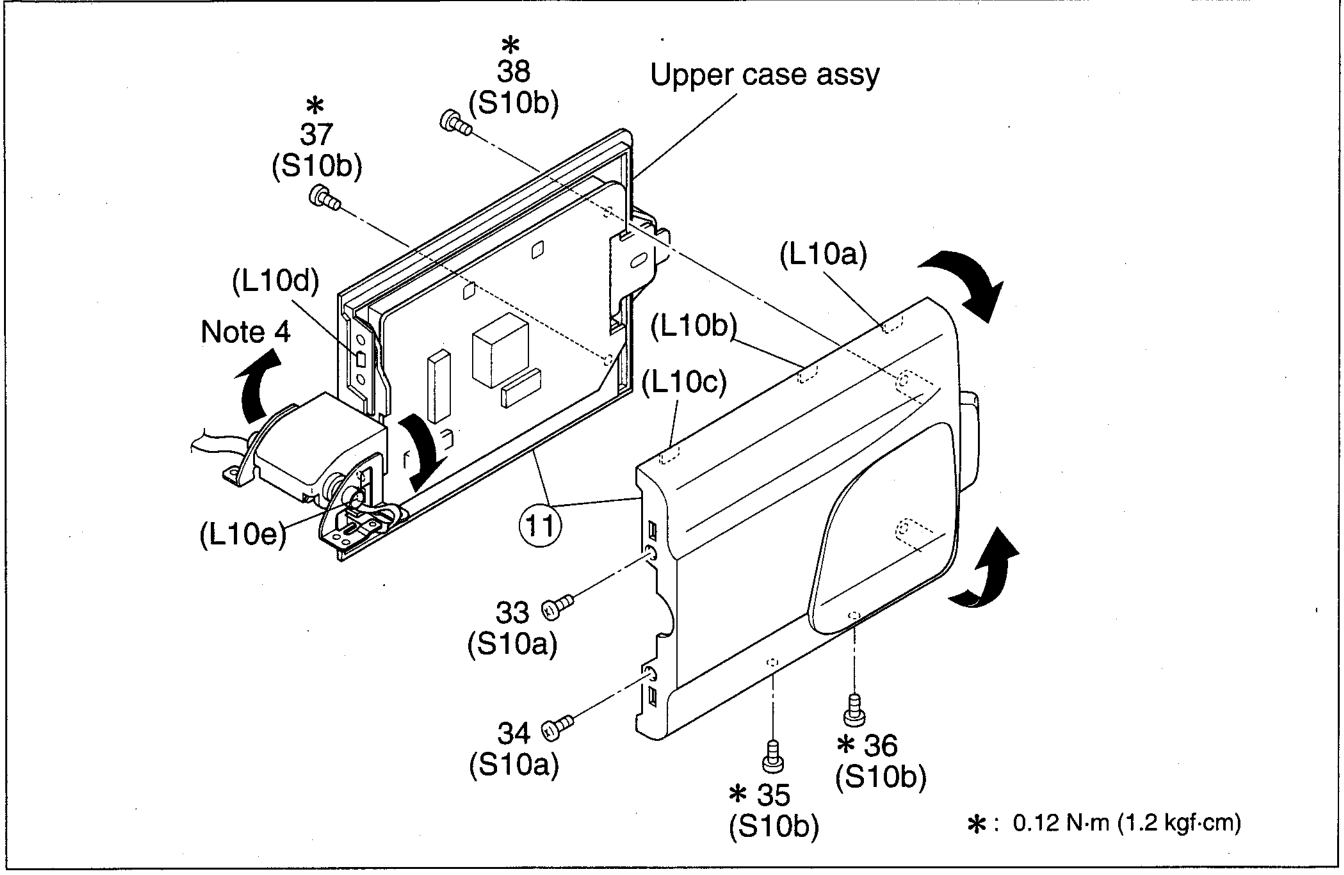

*
38
(S10b)
Upper case assy
*
37
(S10b)
(L10a)
(L10d)
Note 4
(L10b)
(L10c)
(L10e)
11
33
(S10a)
34
(S10a)
* 36
(S10b)
* 35
(S10b)
* : 0.12 N·m (1.2 kgf·cm)

Fig. C10

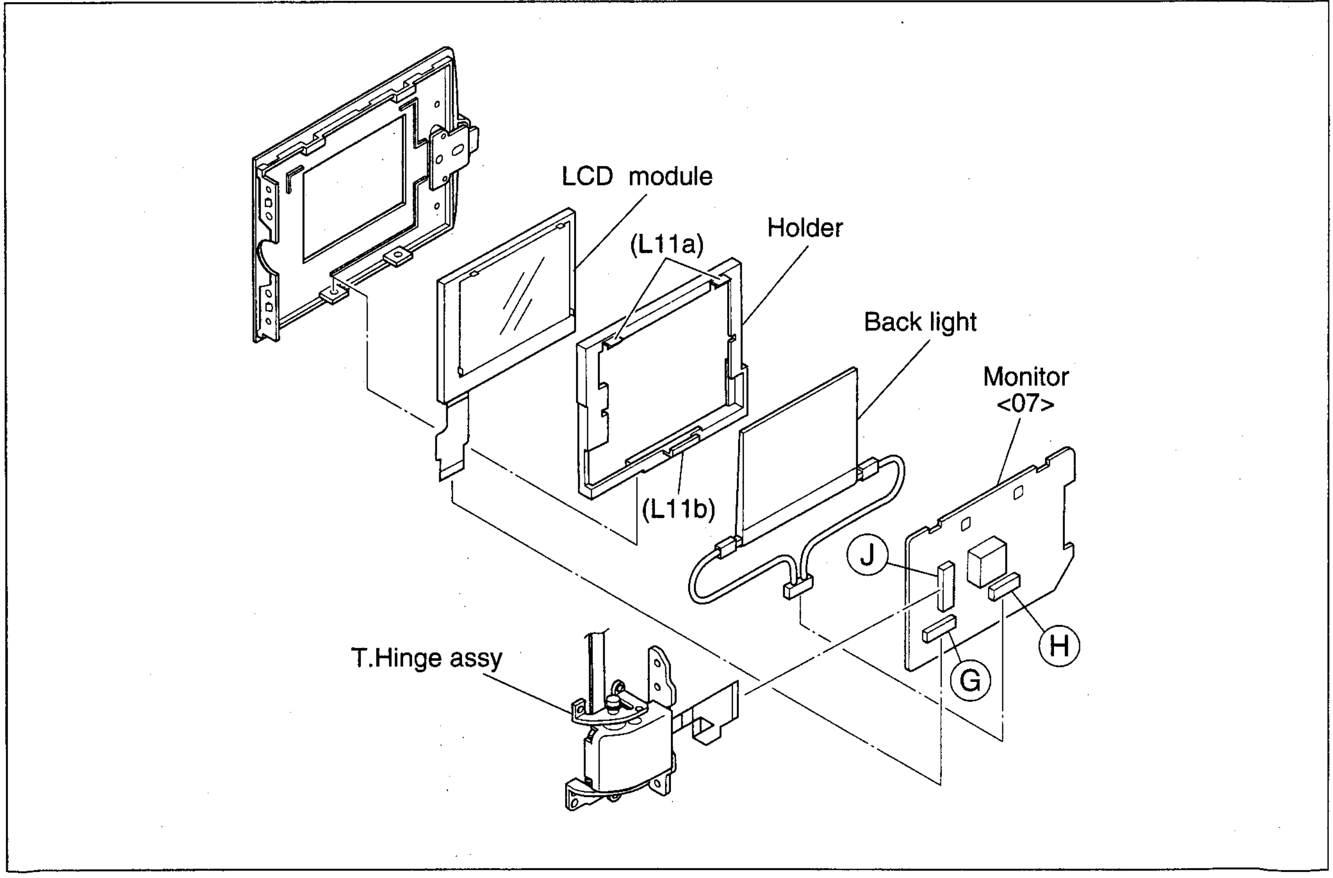

LCD module
(L11a)
Holder
Back light
Monitor
<07>
(L11b)
J
H
G
T.Hinge assy

Fig. C11

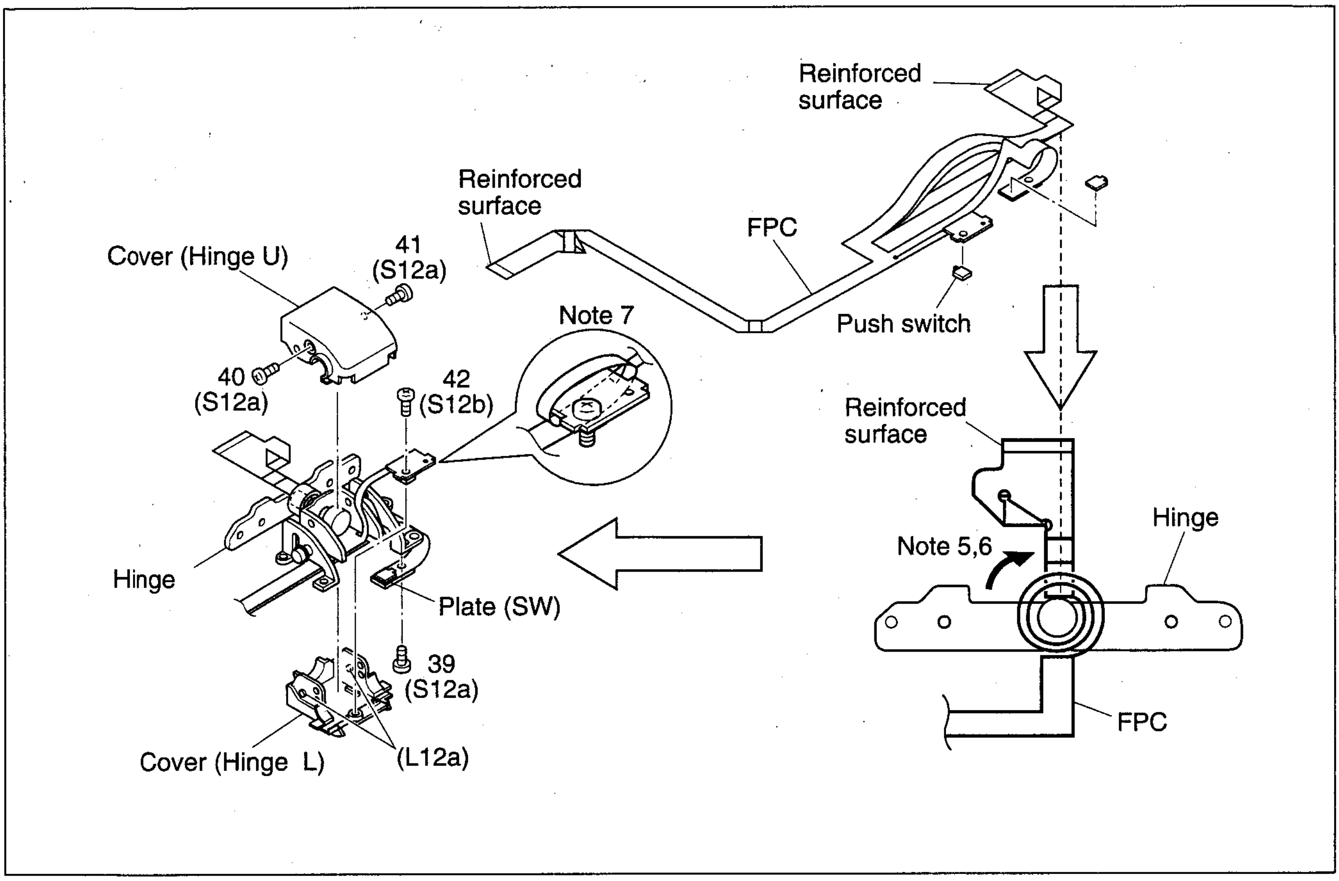

Reinforced surface
Reinforced surface
FPC
Cover (Hinge U)
41
(S12a)
Note 7
Push switch
40
(S12a)
42
(S12b)
Reinforced surface
Hinge
Note 5,6
Hinge
Plate (SW)
39
(S12a)
FPC
Cover (Hinge L)
(L12a)

Fig. C12

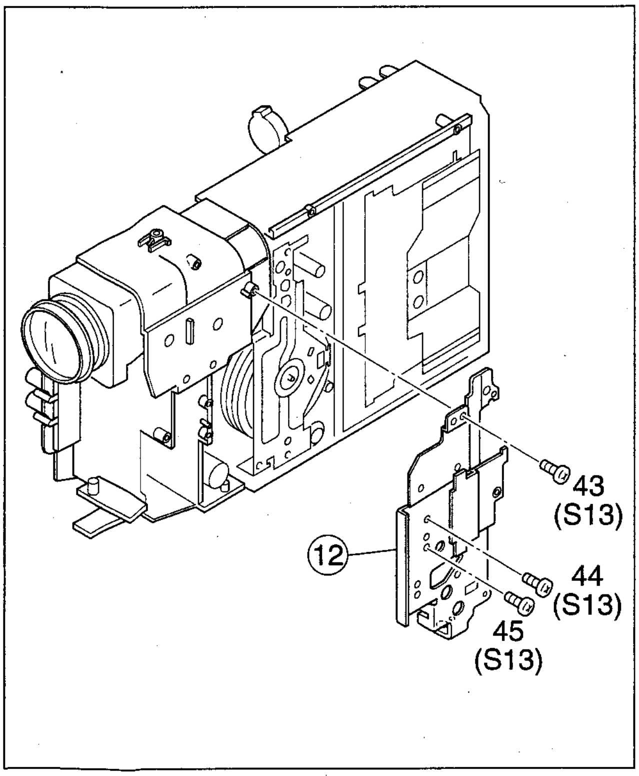
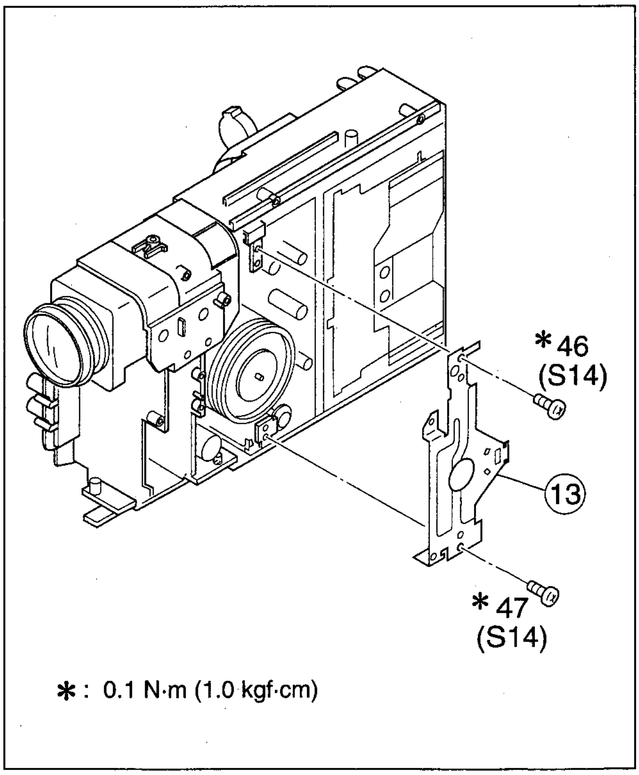

43
(S13)
⑫
44
(S13)
45
(S13)

Fig. C13


*46
(S14)
⑬
*47
(S14)

*: 0.1 N·m (1.0 kgf·cm)

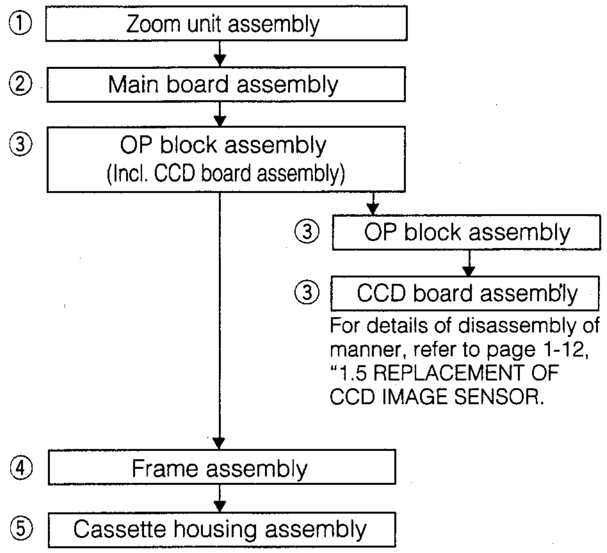
Fig. C14

1.4 DISASSEMBLY/ASSEMBLY OF CAMERA SECTION AND DECK SECTION

1.4.1 Flowchart of disassembly

The following flowchart shows the disassembly of the camera section and deck section. When assembly of the camera section and deck section, follow this flowchart in the reverse order.

<Camera section/Deck section>


① Zoom unit assembly
② Main board assembly
③ OP block assembly (Incl. CCD board assembly)
③ OP block assembly
③ CCD board assembly
④ Frame assembly
⑤ Cassette housing assembly

For details of disassembly of manner, refer to page 1-12, "1.5 REPLACEMENT OF CCD IMAGE SENSOR.

1.4.2 Disassembly method

STEP /LOC NO.	PART	Fig. No.	REMOVAL	
			*UNLOCK/RELEASE/ UNPLUG/UNCLAMP/ UNSOLDER	Note
①	ZOOM UNIT ASSEMBLY	D1	3(S1) *CONNECTOR Ⓚ	<NOTE 1>
②	MAIN BOARD ASSEMBLY	D2	2(S2a), (S2b) *CONNECTOR Ⓛ,Ⓜ,Ⓝ,Ⓞ Ⓟ,Ⓠ,Ⓡ,Ⓢ	<NOTE 1>
③	OP BLOCK ASSEMBLY	D3	2(S3) CUSHION (OP)	–
④	FRAME ASSEMBLY	D4	2(S4a), (S4b)	–
⑤	CASSETTE HOUSING ASSEMBLY	D5	4(S5)	–

List of Abbreviations:
3(S1) = 3 Screws (S1)

Reference Notes:
<NOTE 1>
Destination of connectors

Note: *Three kinds of double-arrows in connection tables respectively show kinds of connector/wires.*

⟷ : Board to Board connector
⇔ : Flat wire
↔ : Wire

Con-nector	No. of Pins	Connector		
Ⓚ	14	MAIN CN18	⇔	ZOOM UNIT
Ⓛ	2	MAIN CN4	↔	LOADING MOTOR
Ⓜ	10	MAIN CN1	⇔	DRUM MOTOR
Ⓝ	11	MAIN CN5	⇔	VIDEO/FLY. E HEAD
Ⓞ	14	MAIN CN2	⇔	SENSOR
Ⓟ	22	MAIN CN15	⇔	OP BLOCK
Ⓠ	14	MAIN CN22	⇔	CCD
Ⓡ	11	MAIN CN7	⇔	A/C HEAD
Ⓢ	18	MAIN CN3	⇔	CAPSTAN MOTOR

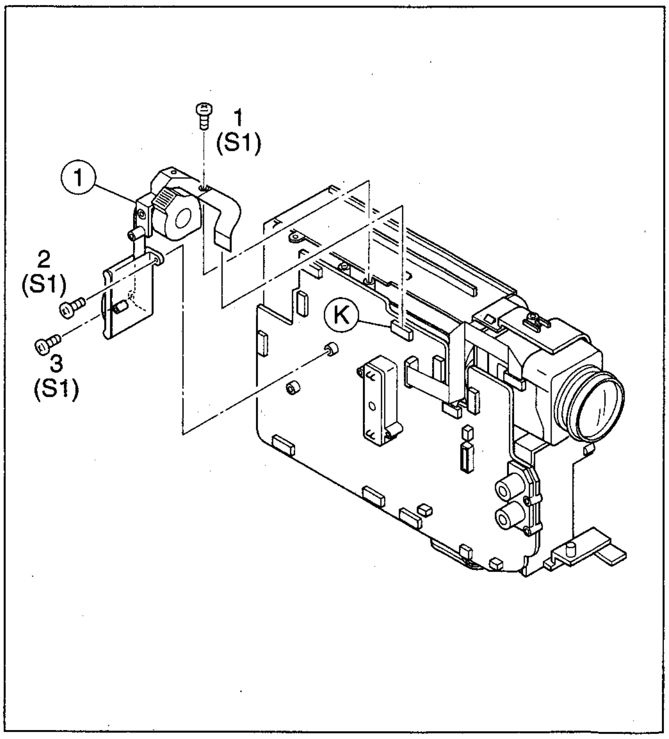
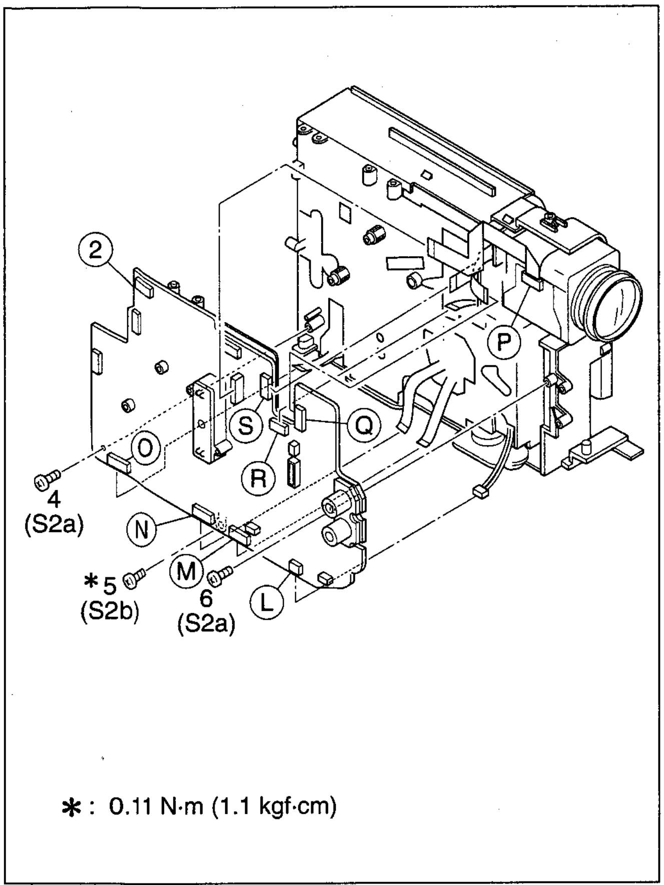

1 (S1)
①
2 (S1)
3 (S1)
Ⓚ

Fig. D1


2
S
Q
P
O
R
4
(S2a)
N
*5
(S2b)
M
6
(S2a)
L

✻ : 0.11 N·m (1.1 kgf·cm)

Fig. D2

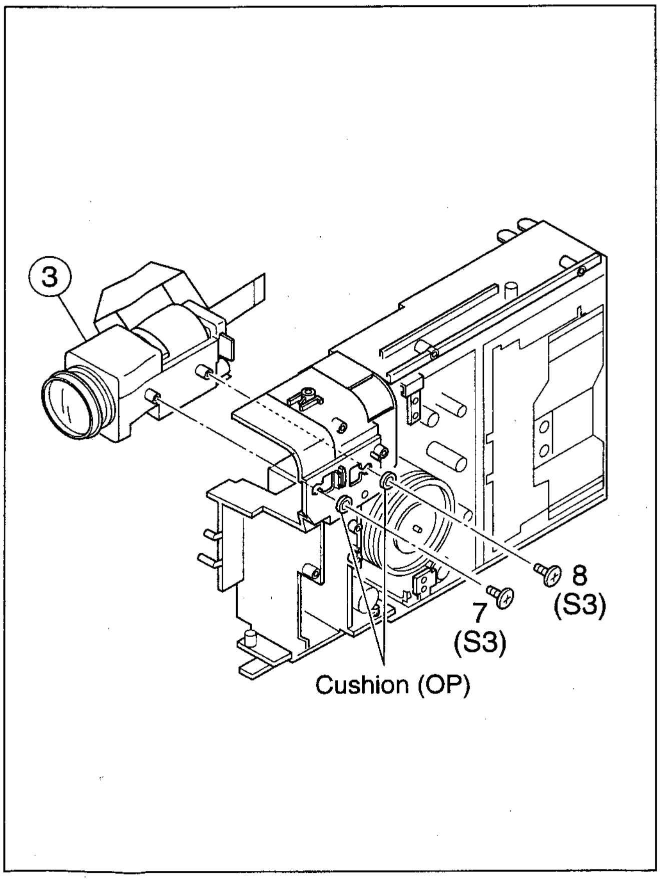
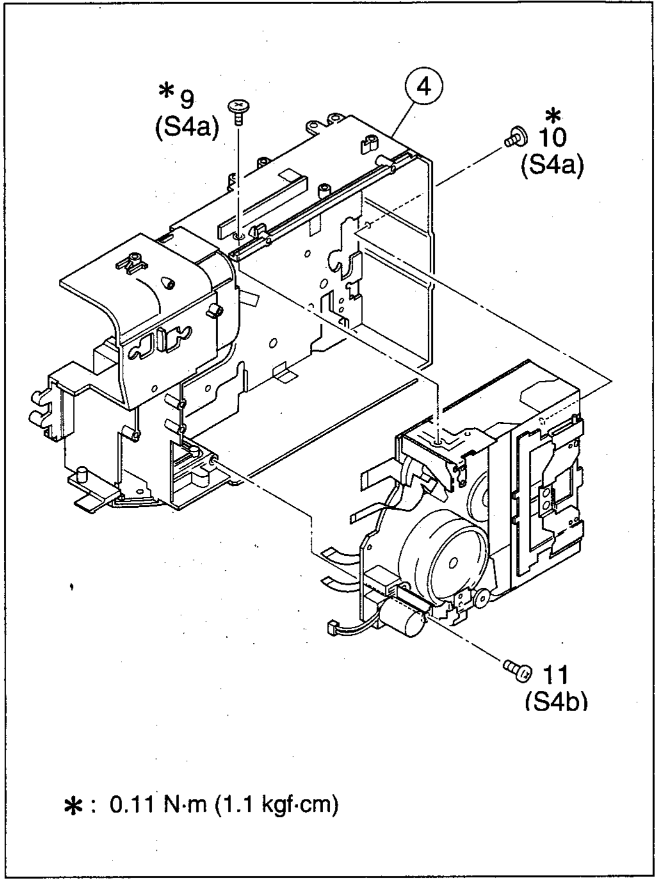

3
8
(S3)
7
(S3)
Cushion (OP)

Fig. D3


*9
(S4a)
4
*
10
(S4a)
11
(S4b)

✻ : 0.11 N·m (1.1 kgf·cm)

Fig. D4

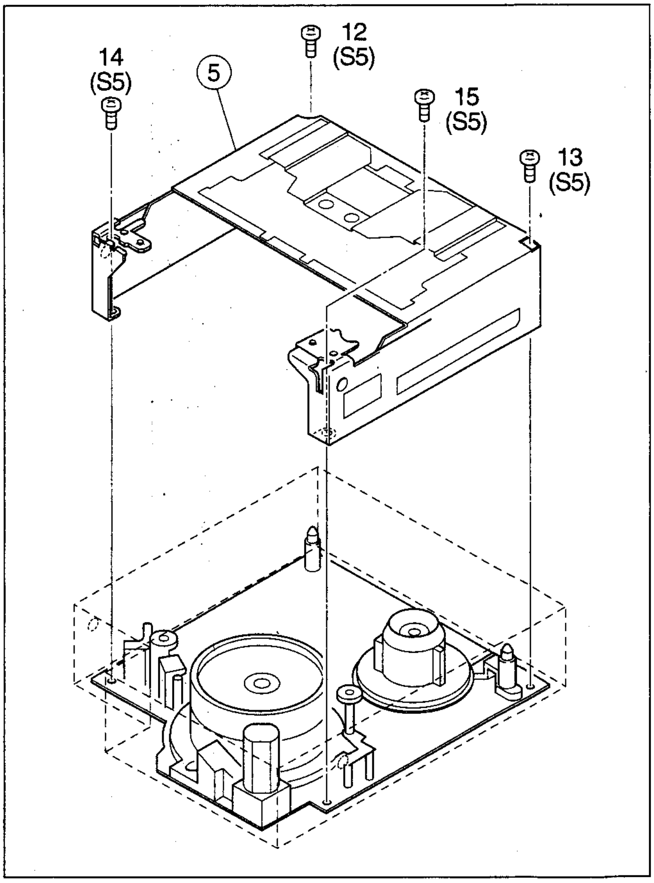

14
(S5)
5
12
(S5)
15
(S5)
13
(S5)

Fig. D5

1.5 REPLACEMENT OF CCD IMAGE SENSOR

Notes:

- *Pay the most careful attention to the transparent glass and optical LPF of the CCD image sensor so a not the soil and damage them. If something is soiled with finger-prints, etc., gently clean it with silicon-processed paper/cloth or chamois.*
- *When the CCD image sensor is shipped from the factory, there are protection seals applied onto the transparent glass. Leave the protector as it is, and take it off just before assembling the CCD image sensor to the OP block.*

1.5.1 Removal of CCD image sensor

1. Remove two screws (1, 2) securing the CCD base assy, and disassemble the CCD spacer, the optical LPF, spacer rubber.

1.5.2 Installation of new CCD image sensor

1. Remove the protection seal from a new CCD image sensor. Next, put the optical LPF, spacer rubber, CCD spacer on the CCD image sensor as they are piled up in this order. At that time, make sure of orientation of each item refering to the following table (see Fig. 1-5-1).

Part Name	Orientation
CCD image sensor	Mark is on the right viewed as indicated by the arrow ⓐ .
Spacer rubber	IC side is horizontal.
Optical LPF	Marks are on the left and bottom viewed as indicated by the arrow ⓐ .

2. Fix the CCD base assy to OP block with the two screws (1, 2) . At that time, be careful of the orientation.
3. After completion of all P.C. boards to the camera section, observe the monitor to confirm no vignetting caused by the bodytube, rings, lens hood, etc. If no vignetting is observed, it can be said that image's parallel, horizontality and centering are correct.

1.5.3 Replacement of CCD board assy

1. Remove one screw (3).
2. Unsolder at the fourteen points on the CCD board assy.

Note: *1. Remove the screw (3) only when the CCD board assy needs replacement.*
2. When installing a new CCD board assy, carry out the above-mentioned procedure in the reverse order.

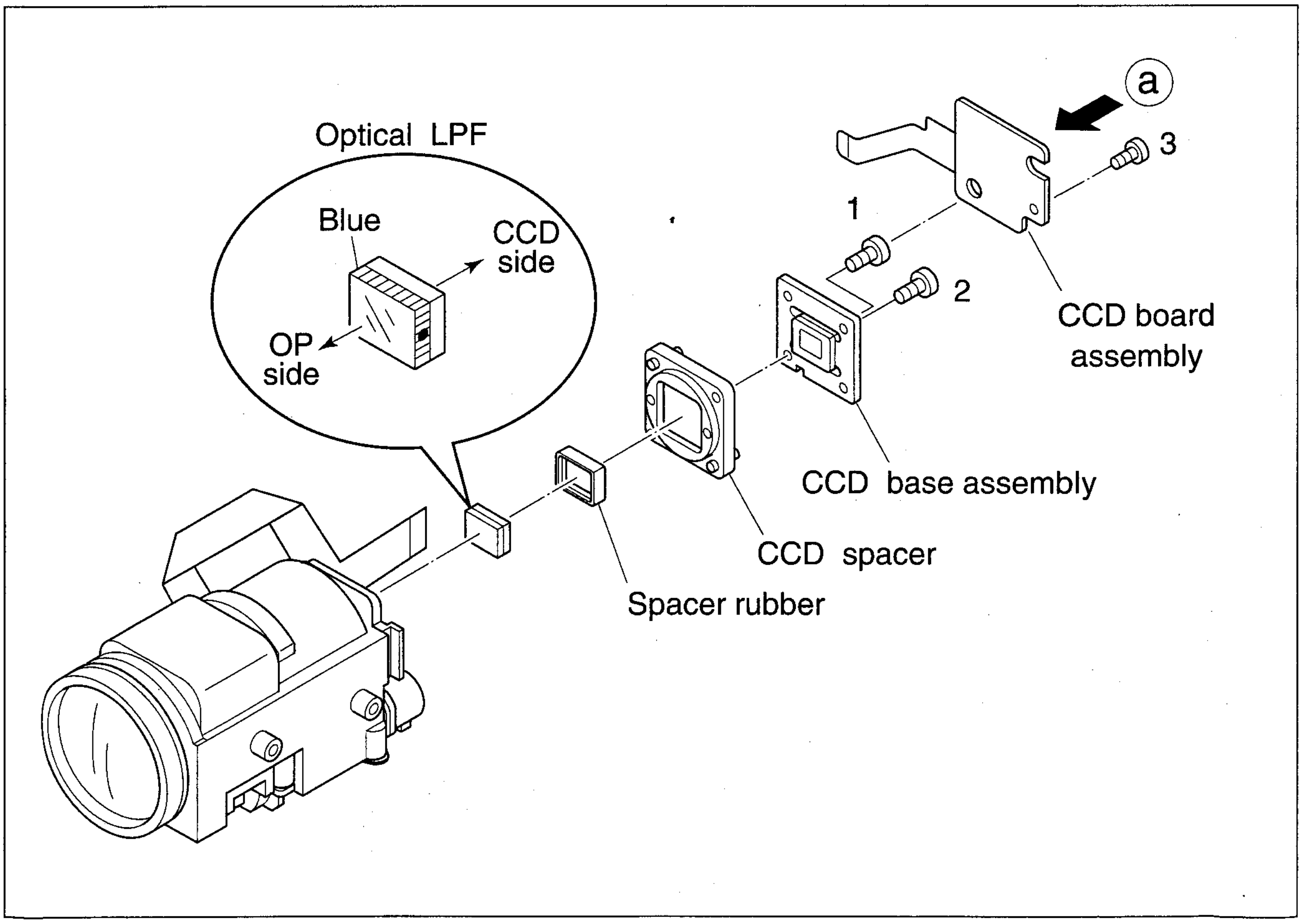


Fig. 1-5-1

1.6 TAKE OUT CASSETTE TAPE

In the event that the set enters the emergency mode as it is loaded with a cassette tape and the cassette tape cannot be ejected with the EJECT button, manually, take it out of the set according to the following procedure.

Note: *If the mechanism comes into the unloading mode as the cassette tape is not held by hand, it results in tape damage.*

1. Disconnect the set from the power source.
2. Remove the cassette cover assembly, Cover (VF), top cover, (See Fig. C1, C2 and C3, Page 1-1,·2, 3 and 4)
3. Connect a jumper wire to each pole of the loading motor as shown by the magnified view ⓑ (Fig. 1-6-1)
4. While holding down the cassette housing by hand, connect the jumper wires to a battery to run the mechanism to the EJECT position four unloading. If this unloading operation is performed as the cassette housing is not held down by hand, the front lid of the cassette may damage the tape when it is ejected.
5. For taking in the slack of the tape, run the mechanism to the EJECT position as the front lid of the cassette is left open, and turn the take-up reel in the forward direction to wind up the tape. After confirming that the tape has completely been wound up and the supply reel is idling, take the cassette tape out of the cassette housing.

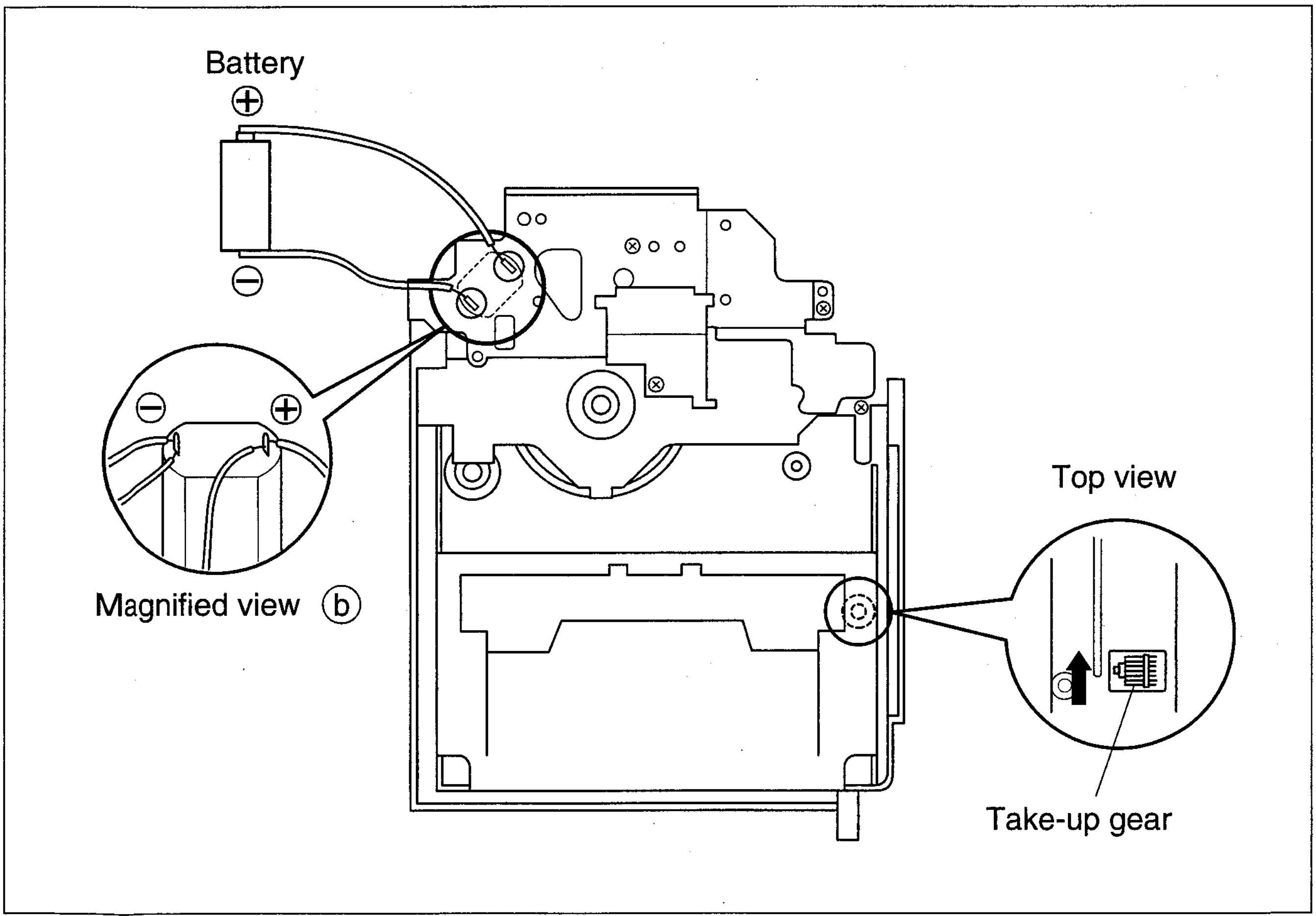


Fig. 1-6-1

1.7 EXTENSION CABLE CONNECTION

Connector	Connection			Pins	Parts Number
①	MAIN CN15	⟷	OP BLOCK	22	YTU94074-22 YTU94077-22
②	MAIN CN22	⟷	CCD	14	YTU94074-14 YTU94077-14
③	MAIN CN7	⟷	A/C HEAD	11	YTU94074-11 YTU94077-11
④	MAIN CN3	⟷	CAPSTAN MOTOR	18	YTU94074-18 YTU94077-18
⑤	MAIN CN2	⟷	SENSOR	14	YTU94074-14 YTU94077-14
⑥	MAIN CN5	⟷	VIDEO/FLY. E HEAD	11	YTU94074-11 YTU94077-11
⑦	MAIN CN1	⟷	DRUM MOTOR	10	YTU94074-10 YTU94077-10
⑧	MAIN CN4	⟷	LOADING MOTOR	2	YUJ40095A-2
⑨	MAIN CN12	⟷	E. VF	5	YUJ40095A-5
⑩	MAIN CN13	⟷	OPE (DECK) UNIT	10	YTU94074-10 YTU94077-10
⑪	MAIN CN18	⟷	ZOOM UNIT	14	YTU94074-14 YTU94077-14

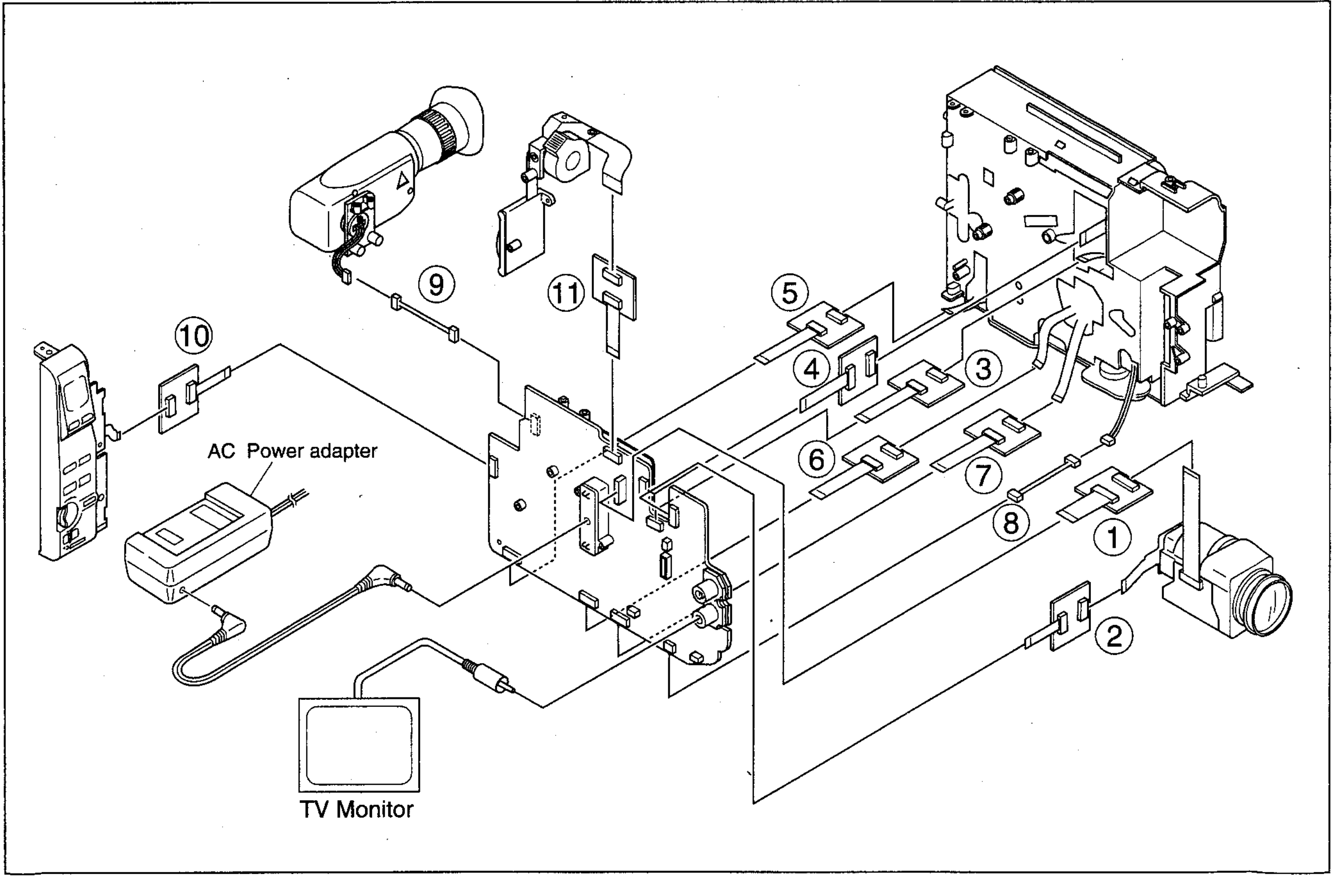


Fig. 1-7-1

1.8 EMERGENCY DISPLAY

Whenever some abnormal signal is supplied to mechacon CPU, an error number (E 04, for example) displayed in the electronic view finder and LCD screen.

- In an emergency mode, all operations except turning on/off the POWER switch are ineffectual.

E. VF/LCD	Symptom	Mode when observed	Resulting mode
E07	Short circuit of capstan MDA	Power ON	Power OFF
E06	CAPSTAN FG input absent	EDIT	Power OFF
E04	DRUM FF input absent	DRUM rotation	Power OFF
E03	SUPPLY REEL FG input absent	REC, PLAY, SEARCH, FF	UNLOADING →Power OFF
E02	Mode control motor rotates for more than 10 sec without shift to next mode.	UNLOADING	Power OFF
E01	Mode control motor rotates for more than 10 sec without shift to next mode.	LOADING	Power OFF
E00	Overtime the programming transaction	REC, PLAY	Power OFF

1.9 DEMONSTRATION MODE

This model has the DEMONSTRATION mode.

1) How to set the DEMONSTRATION mode.
The camera can be entered into the DEMONSTRATION mode by setting on the DISPLAY screen appearing on the LCD monitor (or in the viewfinder).

When entering the camera into the DEMONSTRATION mode, pay heed to the following matters.
No cassette is set in the camcorder or a cassette is set in the camcorder but it is protected from recording.

Note) *The indications of the DISPLAY page very depending on the setting.*

2) How to cancel the DEMONSTRATION mode.
To cancel the DEMONSTRATION mode, turn the POWER switch off ("POWER OFF").

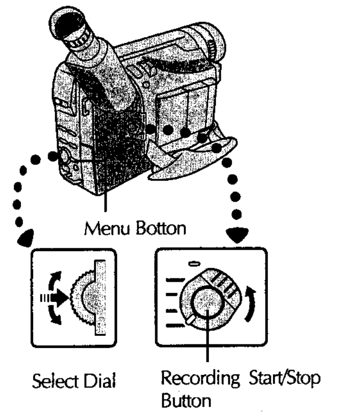
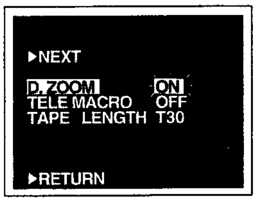


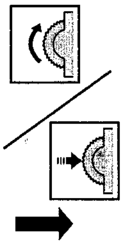
Fig. 1-9-1

1. Set the POWER switch to turn on the "PRO".
   Assume that the P.AE BUTTON is set at "FG".
   Press the MENU BUTTON once.
   The first page of the DISPLAY appears on the LCD monitor (or in the viewfinder).

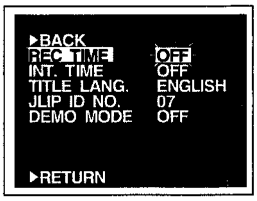


▶NEXT
D. ZOOM ON
TELE MACRO OFF
TAPE LENGTH T30
▶RETURN

Display 1



2. Turn the SELECT DIAL in the direction of the arrow to set the cursor at "NEXT".
   Press the SELECT DIAL once.
   The second page of the DISPLAY appears on the LCD monitor (or in the viewfinder).



▶BACK
REC TIME OFF
INT. TIME OFF
TITLE LANG. ENGLISH
JLIP ID NO. 07
DEMO MODE OFF
▶RETURN

Display 2

See to next page ➡

<Flow chart>

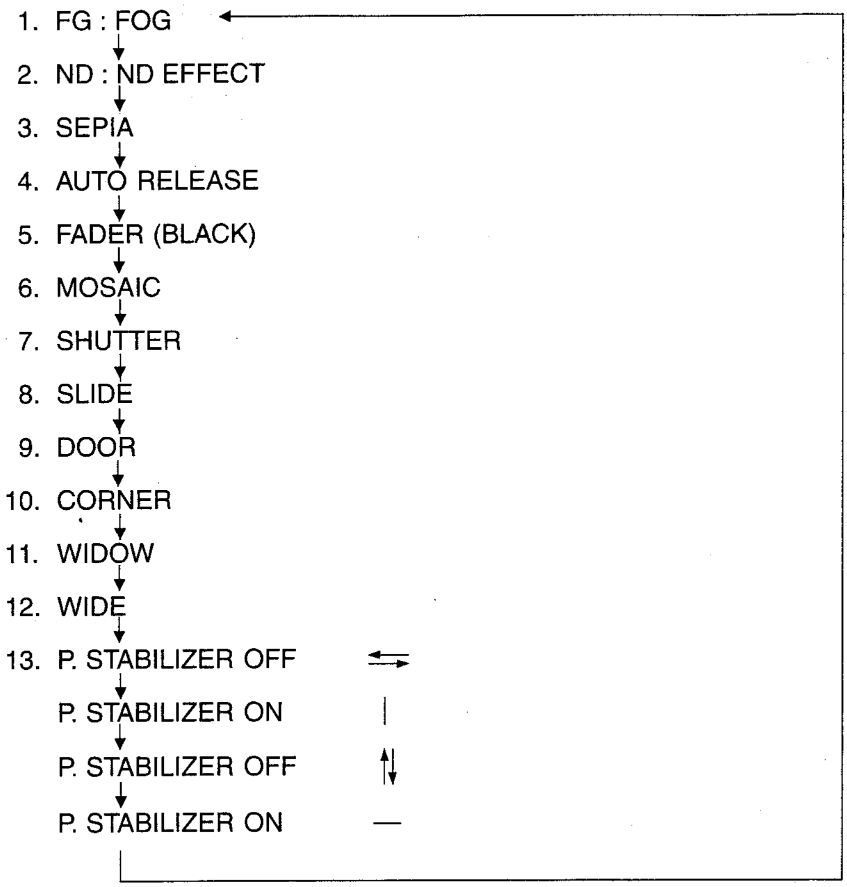
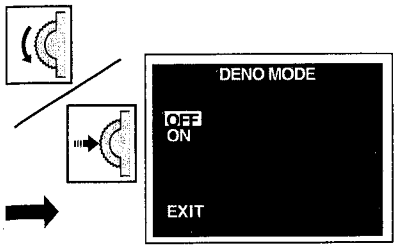

1. FG : FOG
2. ND : ND EFFECT
3. SEPIA
4. AUTO RELEASE
5. FADER (BLACK)
6. MOSAIC
7. SHUTTER
8. SLIDE
9. DOOR
10. CORNER
11. WIDOW
12. WIDE
13. P. STABILIZER OFF
P. STABILIZER ON
P. STABILIZER OFF
P. STABILIZER ON

Fig. 1-9-2

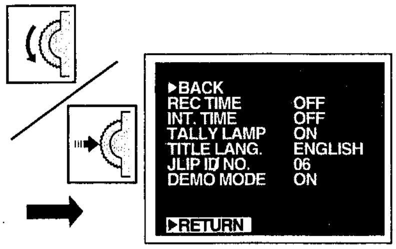
3. Turn the SELECT DIAL in the direction of the arrow to set the cursor at "DEMO MODE". Then, press the SELECT DIAL once. The third page of the DEMO MODE appears on the LCD monitor (or in the viewfinder).

4. Turn the SELECT DIAL in the direction of the arrow to set the cursor at "ON". Then, press the SELECT DIAL once. The fourth page of the DISPLAY appears on the LCD monitor (or in the viewfinder). ("DEMO MODE" is switched "ON" from "OFF" status.)

5. Press the SELECT DIAL once. The camcorder automatically enters the DEMONSTRATION mode and it repeats demonstration operation. While the camcorder is performing demonstration, all operations except turning on/off the POWER switch are ineffectual.

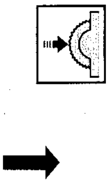

DENO MODE
OFF
ON
EXIT

Display 3


▶BACK
▶RETURN

REC TIME OFF
INT. TIME OFF
TALLY LAMP ON
TITLE LANG. ENGLISH
JLIP ID NO. 06
DEMO MODE ON

Display 4



Refer to Fig. 1-9-2.
While the DEMONSTRATION mode is activated, a word of "DEMONSTRATION" is appearing on the screen scrolling from right to left.

SECTION 2
MECHANISM ADJUSTMENT

YMA0027A is used in this model.
For the MECHANISM ADJUSTMENT, please refer to the MECHANISM ASSEMBLY of the Service Manual (No. 86532).

2.1 Required adjustment tools

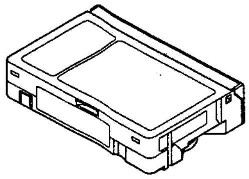
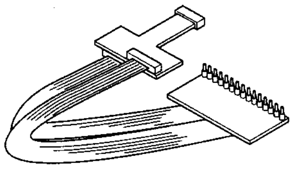
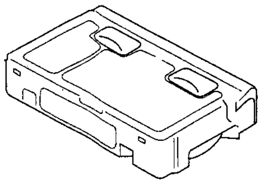
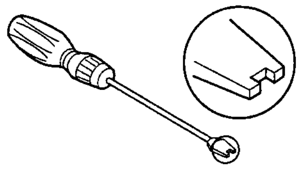
Alignment tape for interchangeability MHP-C: SP/MHP-LC: EP	Jig connector cable YTU93082E
	
Cassette torque meter PUJ50431-2	Roller Driver PTU94002-2
	

Table 2-1-1

SECTION 3
ELECTRICAL ADJUSTMENT

3.1 ELECTRICAL ADJUSTMENT

3.1.1 PREPARATION

1. Precaution

This model does not contain adjustment controls (VR). General deck system, camera system and monitor system adjustment are not required. However, if MAIN board and MONITOR board need replacement, please use original E^{2}PROM on to new board. Then adjustment are not required. And if parts such as the following need replacement, special computerized adjustment are required (Refer to sec. 3.1.1-4). Please contact to JVC Service for detaile information.

- OP block
- E^{2}PROM (IC104 of MAIN board)
- MONITOR
- E^{2}PROM (IC7602 of MONITOR board)

In the event of malfunction with electrical circuits, trouble-shooting with the aid of proper test instruments most be done first, and then commence necessary repair, replacement and adjustment, etc.

1. In case of wiring to chip test points for measurement, use IC clips, etc. to avoid any stress.
2. Since connectors are fragile, carefully handle them in disconnecting and connecting.
3. Shortcircuit between operation un it and DECK chassis.

2. Required test equipment

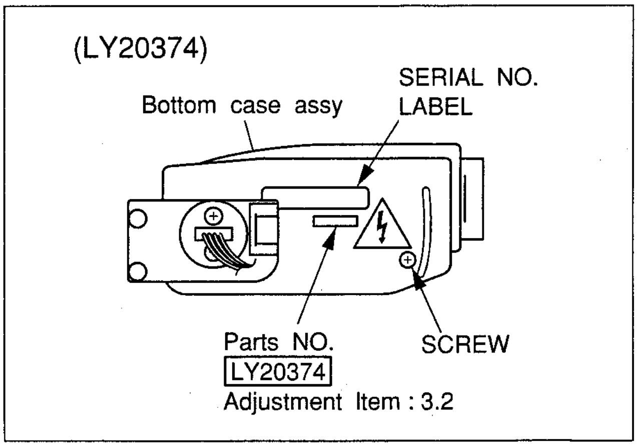
1. Color TV monitor.
2. AC power adapter
3. Oscilloscope (dual-trace type, observable 100 MHz or higher frequency)
   * It is recommended to use one observable 300 MHz or higher frequency.
4. Digital voltmeter
5. Frequency counter (with threshold level adjuster)
6. Personal computer

3. Required adjustment tools

For detsails of special jigs necessary for adjustment, refer to page 1-2 and 1-3 of the Section 1.

4. E. VF section adjustment

Referring to "SEC. 1 DISASSEMBLY" and connect the E.VF WIRE to CN12 of the MAIN board.


(LY20374)
Bottom case assy
SERIAL NO. LABEL
Parts NO.
LY20374
Adjustment Item : 3.2
SCREW

5. Connection for Service support system

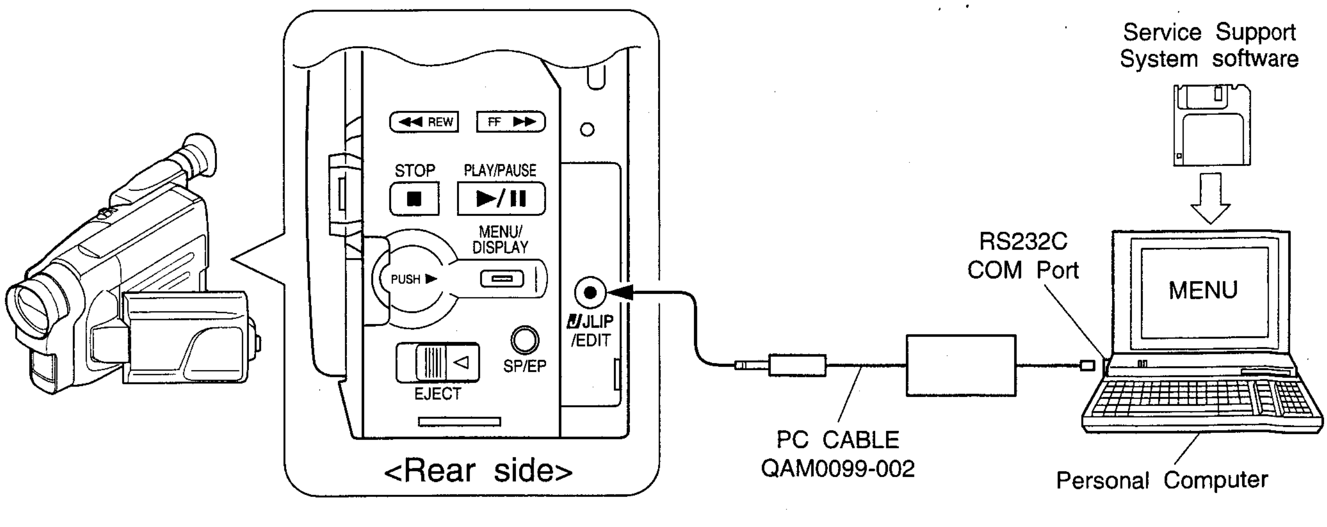

REW
FF
STOP
PLAY/PAUSE
MENU/ DISPLAY
PUSH
JLIP /EDIT
SP/EP
EJECT
<Rear side>
Service Support System software
MENU
RS232C COM Port
PC CABLE QAM0099-002
Personal Computer

Fig. 3-1-1 Connection for Service support system

■ FUSE LOCATION FOR MAIN BOARD ASSEMBLY

FOIL SIDE

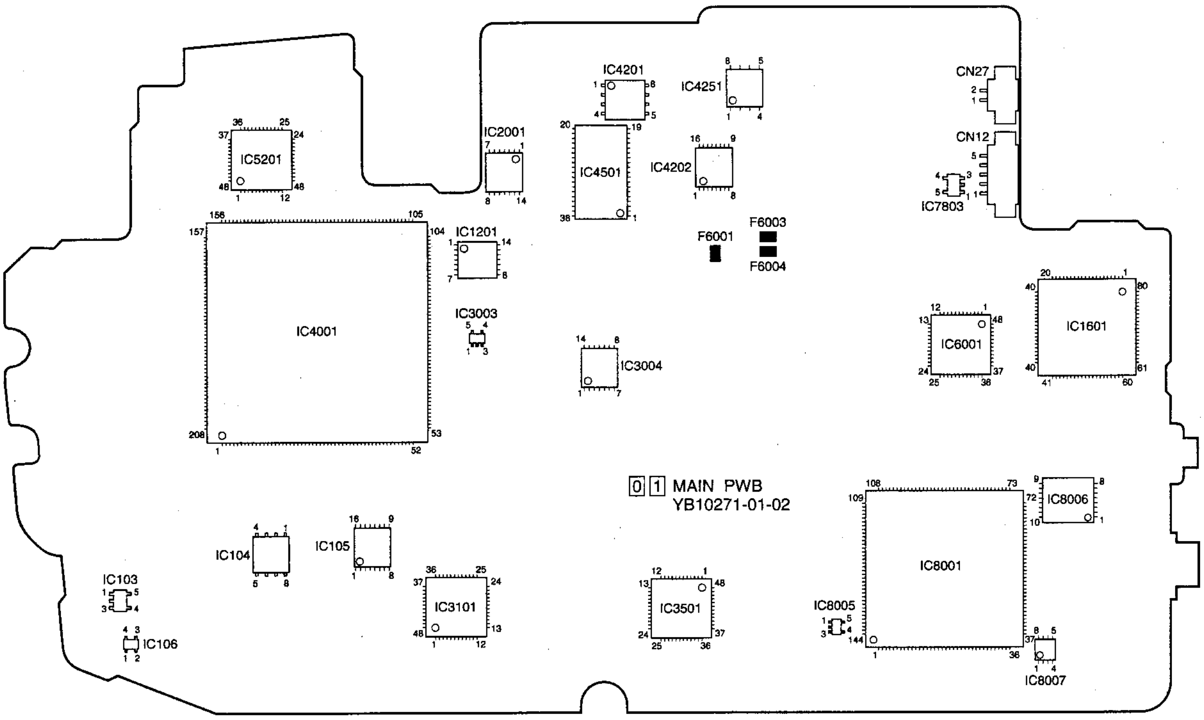

IC4201
IC4251
CN27
IC2001
IC5201
IC4501
IC4202
CN12
IC7803
IC1201
F6001
F6003
F6004
IC4001
IC3003
IC3004
IC6001
IC1601
0 1 MAIN PWB
YB10271-01-02
IC8006
IC104
IC105
IC8001
IC103
IC3101
IC3501
IC8005
IC106
IC8007

Fig. 3-1-2 FUSE location for MAIN board assembly (FOIL SIDE)

COMPONENT SIDE

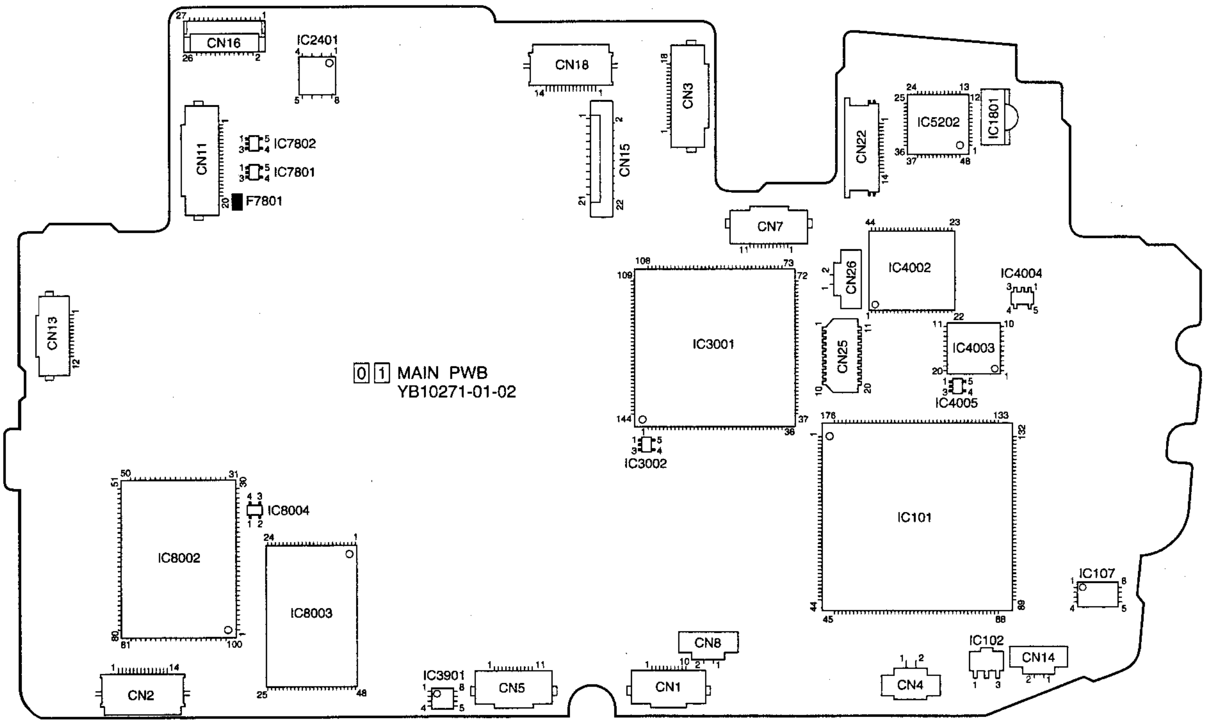

CN16
IC2401
CN18
CN3
CN11
IC7802
IC7801
F7801
CN15
CN22
IC5202
IC1801
CN7
CN13
IC4002
CN26
IC4004
IC3001
CN25
IC4003
IC4005
0 1 MAIN PWB
YB10271-01-02
IC3002
IC101
IC8004
IC8002
IC8003
IC107
CN8
IC102
CN14
CN2
IC3901
CN5
CN1
CN4

Fig. 3-1-3 FUSE location for MAIN board assembly (COMPONENT SIDE)

3.2 ELECTRONIC VIEWFINDER (E. VF) ADJUSTMENT

Notes:

- *Unless otherwise specified, all measurement points and adjustment parts are located on E. VF board.*
- *After adjustment or replacement of the deflection yoke or the centering magnet, fix it by the band as shown the figure below.*

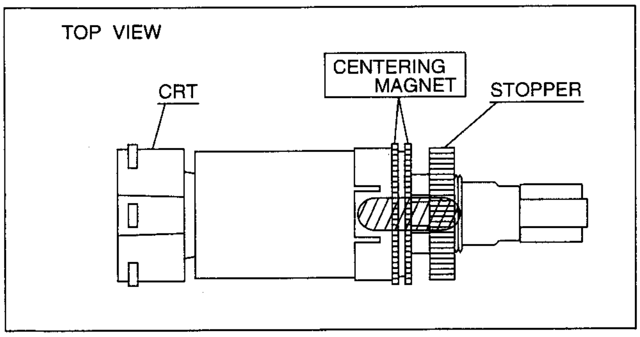


Fig. 3-2-1 E. VF

- *After adjustment is completed, compare the picture on the E. VF screen with the monitor TV.*

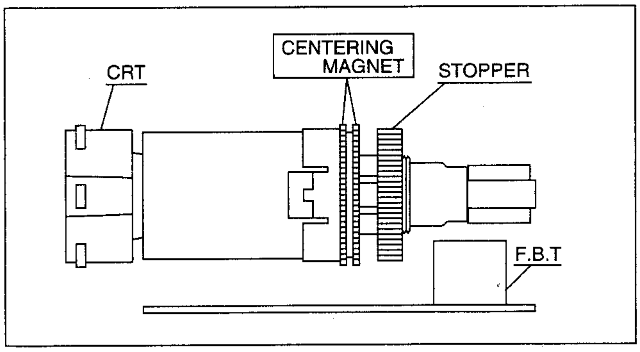


Fig. 3-2-2 E. VF

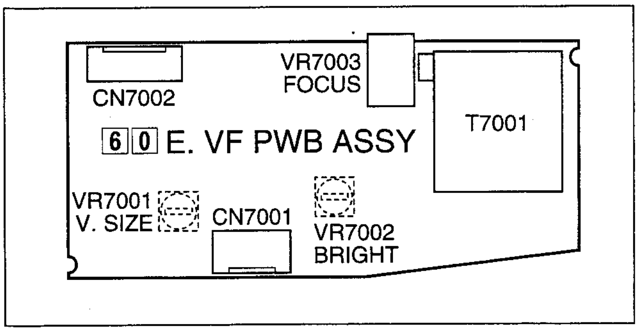


Fig. 3-2-3 E. VF board

3.2.1 Tilt

Subject	• Alignment tape • Stairstep
Mode	• PB
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• Deflection yoke
Specification	• The picture is visible as same as monitor TV.

1) Put the deflection yoke to the most inner side of CRT neck first. Then fix the stopper temporary.
2) Adjust the tilt of picture on the E. VF screen by tilting the deflection yoke.
3) Fix the stopper completely.

3.2.2 Centering

Subject	• Alignment tape • Stairstep
Mode	• PB
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• Centering magnet (CRT assy)
Specification	• The center of the E. VF screen

1) While observing the viewfinder screen, adjust the centering magnet to locate the stairstep in the center of the viewfinder screen.

3.2.3 Vertical scanning

Subject	• Camera picture
Mode	• EE
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR7001 (V. SIZE)
Specification	• Normal picture amplitude

1) Observing the viewfinder screen, adjust VR7001 for normal picture amplitude.

3.2.4 Brightness

Subject	• –
Mode	• EE • Lens closed
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR7002 (BRIGHT)
Specification	• The CRT raster is just barely visible

1) Close the lens with the cap and adjust VR7002 so that the raster of the CRT is just visible in the E. VF.

3.2.5 Focus

Subject	• Camera picture
Mode	• EE
Equipment	• E. VF
Measurement point	• E. VF screen
Adjusting part	• VR7003 (FOCUS)
Specification	• The center area is clear and defined

1) While observing the viewfinder screen, adjust VR7003 so that the picture at the central area of the screen is clear and defined.

SECTION 4
CHARTS AND DIAGRAMS

NOTES OF SCHEMATIC DIAGRAM

> **Safety precautions**
> **The Components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.**

1. Units of components on the schematic diagram

Unless otherwise specified.

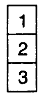
1) All resistance values are in ohm, 1/6 W, 1/8 W (refer to parts list).
   Chip resistors are 1/16 W.
   K: KΩ (1000Ω), M: MΩ (1000KΩ)
2) All capacitance values are in μF, (P: PF).
3) All inductance values are in μH, (m: mH).
4) All diodes are 1SS133, MA165 or 1N4148M (refer to parts list).

2. Indications of control voltage

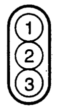
AUX : Active at high

$\overline{\text{AUX}}$ or AUX(L) : Active at low

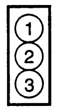
3. Interpreting Connector indications



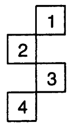
Removable connector



Wire soldered directly on board



Non-removable Board connector

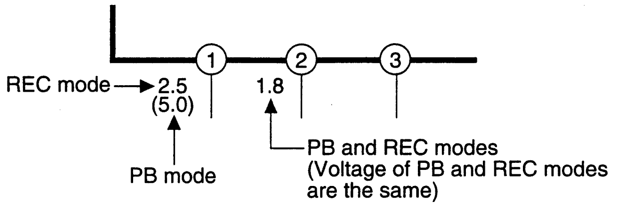


Board to Board

⟶
⟵
⟷ } Connected pattern on board
The arrows indicate signal path

4. Voltage measurement

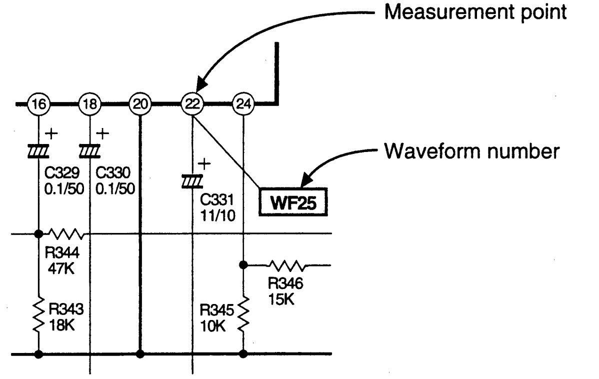
1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
   — : Unmeasurable or unnecessary to measure
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, Normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test charts in the E-E mode
4) Indication on schematic diagram
   Voltage Indications for REC and PB mode on the schematic diagram are as shown below.


REC mode
2.5
(5.0)
1.8
1
2
3
PB mode
PB and REC modes
(Voltage of PB and REC modes are the same)

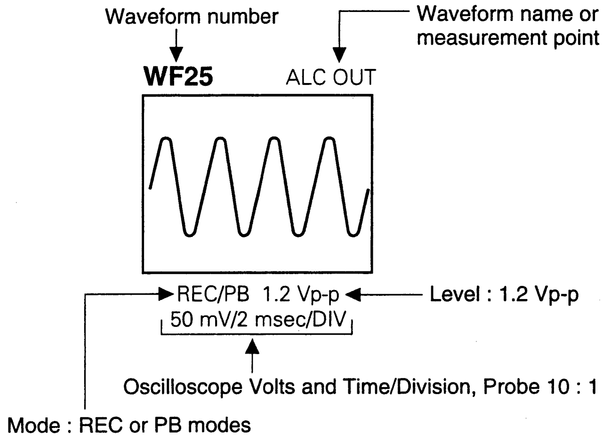
Note: If the voltages are not indicated on the schematic diagram, refer to the voltage charts.

5. Waveform measurement

1) Video circuits
   REC : Colour bar signal in SP mode, normal VHS mode
   PB : Alignment tape, colour bar SP mode, normal VHS mode
2) Audio circuits
   REC : 1KHz, –8 dBs sine wave signal in SP mode, normal VHS mode
   PB : REC then playback it
3) Movie Camera circuits
   Measured using a correctly illuminated gray scale or colour bar test chatrs in the E-E mode
4) Indication on schematic diagram
   Waveform indications on the schematic diagram are as shown below.


Measurement point
16
18
20
22
24
Waveform number
C329
0.1/50
C330
0.1/50
C331
11/10
WF25
R344
47K
R343
18K
R345
10K
R346
15K

5) Waveform indications


Waveform number
Waveform name or measurement point
WF25
ALC OUT
REC/PB 1.2 Vp-p
Level : 1.2 Vp-p
50 mV/2 msec/DIV
Oscilloscope Volts and Time/Division, Probe 10 : 1
Mode : REC or PB modes

6. Signal path Symbols

The arrows indicate the signal path as follows.

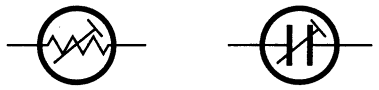
- ⇨ Playback signal path
- ▭▶ Playback and recording signal path
- ➡ Recording signal path (including E-E signal path)
- ⇨▶ Capstan servo path
- ➡▶ Drum servo path

(Example)

- ⇨ R-Y Playback R-Y signal path
- ➡ Y Recording Y signal path

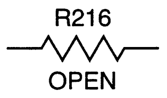
7. Indication of the parts for adjustments

The parts for the adjustments are surrounded with the circle as shown below.



8. Indication of the parts not mounted on the circuit board

"OPEN" is indicated by the parts not mounted on the circuit board.



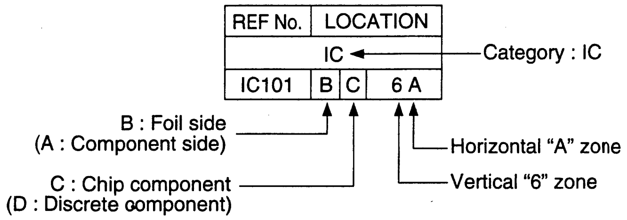
CIRCUIT BOARD NOTES

1. Foil and Component sides

1) Foil side (B side) :
   Parts on the foil side seen from foil face (pattern face) are indicated.
2) Component side (A side) :
   Parts on the component side seen from component face (parts face) indicated.

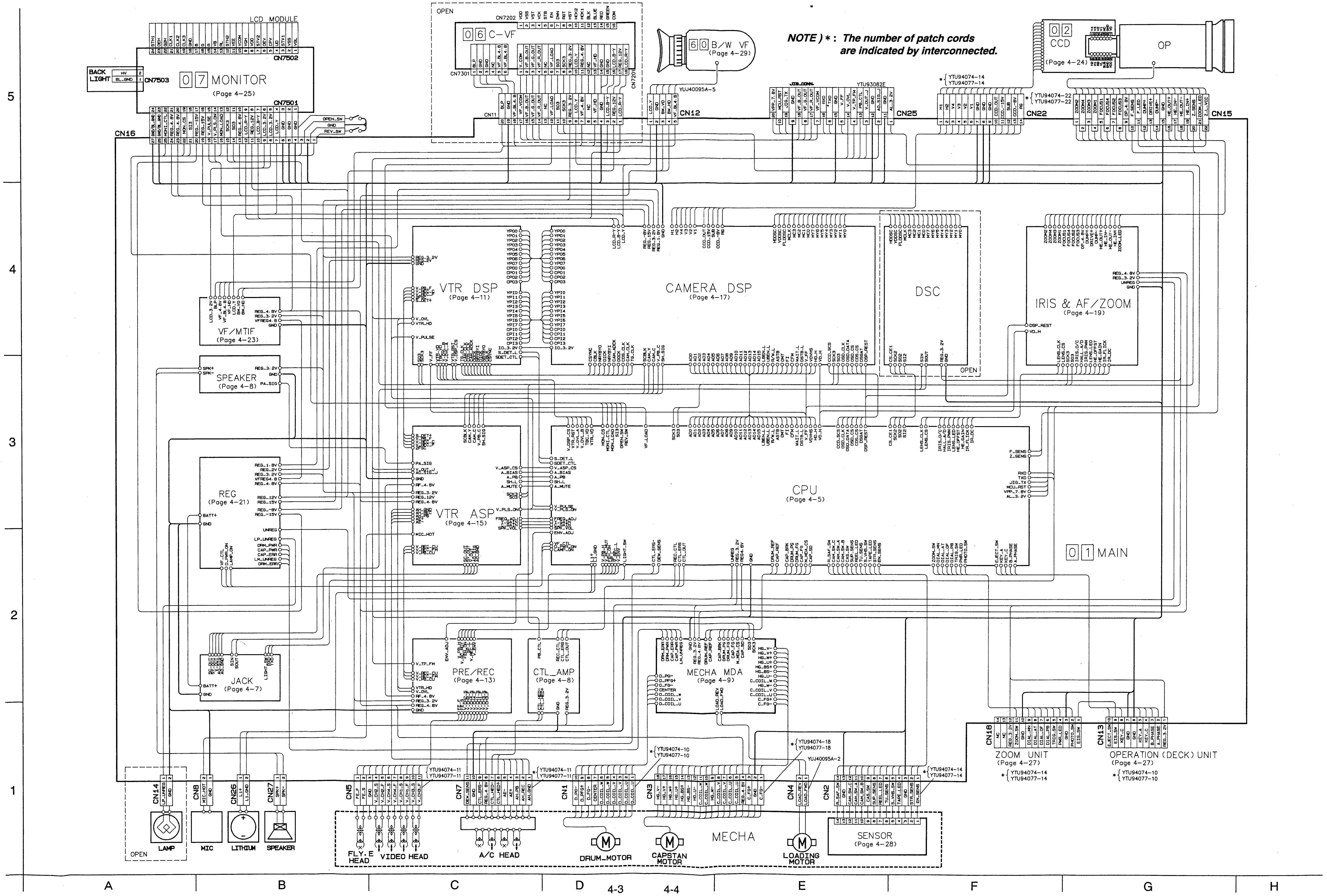
2. Parts location guides

Parts location are indicated by guide scale on the circuit board.


REF No.
LOCATION
IC
Category : IC
IC101
B
C
6 A
B : Foil side
(A : Component side)
C : Chip component
(D : Discrete component)
Horizontal "A" zone
Vertical "6" zone

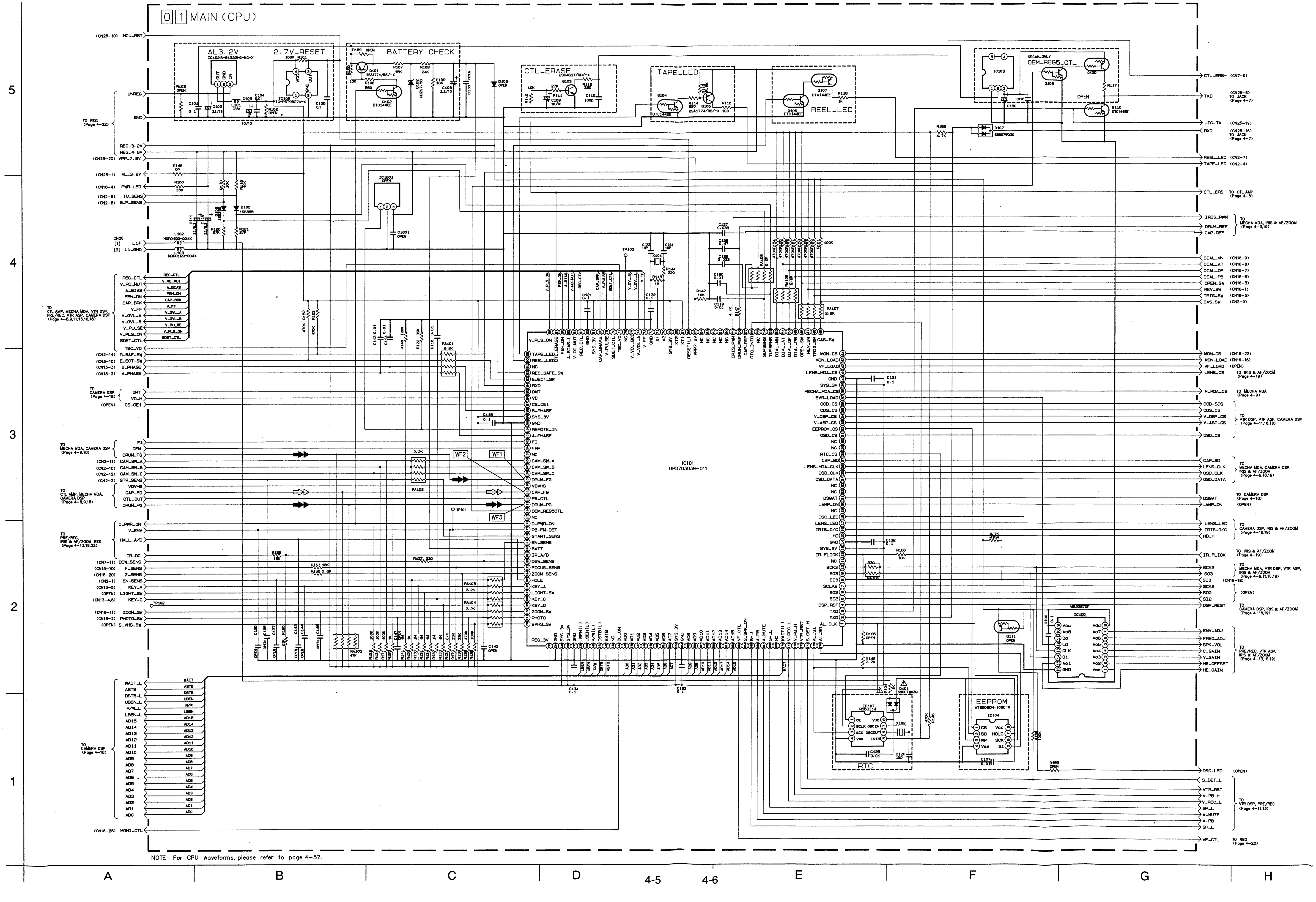
Note:
For general information in service manual, please refer to the Service Manual of GENERAL INFORMATION Edition 4 No. 82054D (January 1994).

4.1 BOARD INTERCONNECTIONS


NOTE) * : The number of patch cords are indicated by interconnected.
LCD MODULE
CN7502
CN7501
CN7503
BACK LIGHT
07 MONITOR
(Page 4-25)
CN16
OPEN
06 C-VF
CN7202
CN7301
CN7201
CN11
60 B/W VF
(Page 4-29)
YUJ40095A-5
CN12
YTU93082E
CN25
02 CCD
(Page 4-24)
OP
YTU94074-14
YTU94077-14
YTU94074-22
YTU94077-22
CN22
CN15
VTR DSP
(Page 4-11)
CAMERA DSP
(Page 4-17)
DSC
OPEN
IRIS & AF/ZOOM
(Page 4-19)
VF/MTIF
(Page 4-23)
SPEAKER
(Page 4-8)
REG
(Page 4-21)
VTR ASP
(Page 4-15)
CPU
(Page 4-5)
01 MAIN
JACK
(Page 4-7)
PRE/REC
(Page 4-13)
CTL_AMP
(Page 4-8)
MECHA MDA
(Page 4-9)
CN18
ZOOM UNIT
(Page 4-27)
CN13
OPERATION (DECK) UNIT
(Page 4-27)
YTU94074-10
YTU94077-10
YTU94074-18
YTU94077-18
YUJ40095A-2
YTU94074-11
YTU94077-11
CN14
CN9
CN26
CN27
CN5
CN7
CN1
CN3
CN4
CN2
LAMP
MIC
LITHIUM
SPEAKER
FLY.E HEAD
VIDEO HEAD
A/C HEAD
DRUM_MOTOR
CAPSTAN MOTOR
MECHA
LOADING MOTOR
SENSOR
(Page 4-28)
1
2
3
4
5
A
B
C
D
E
F
G
H

4.2 CPU SCHEMATIC DIAGRAM

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.

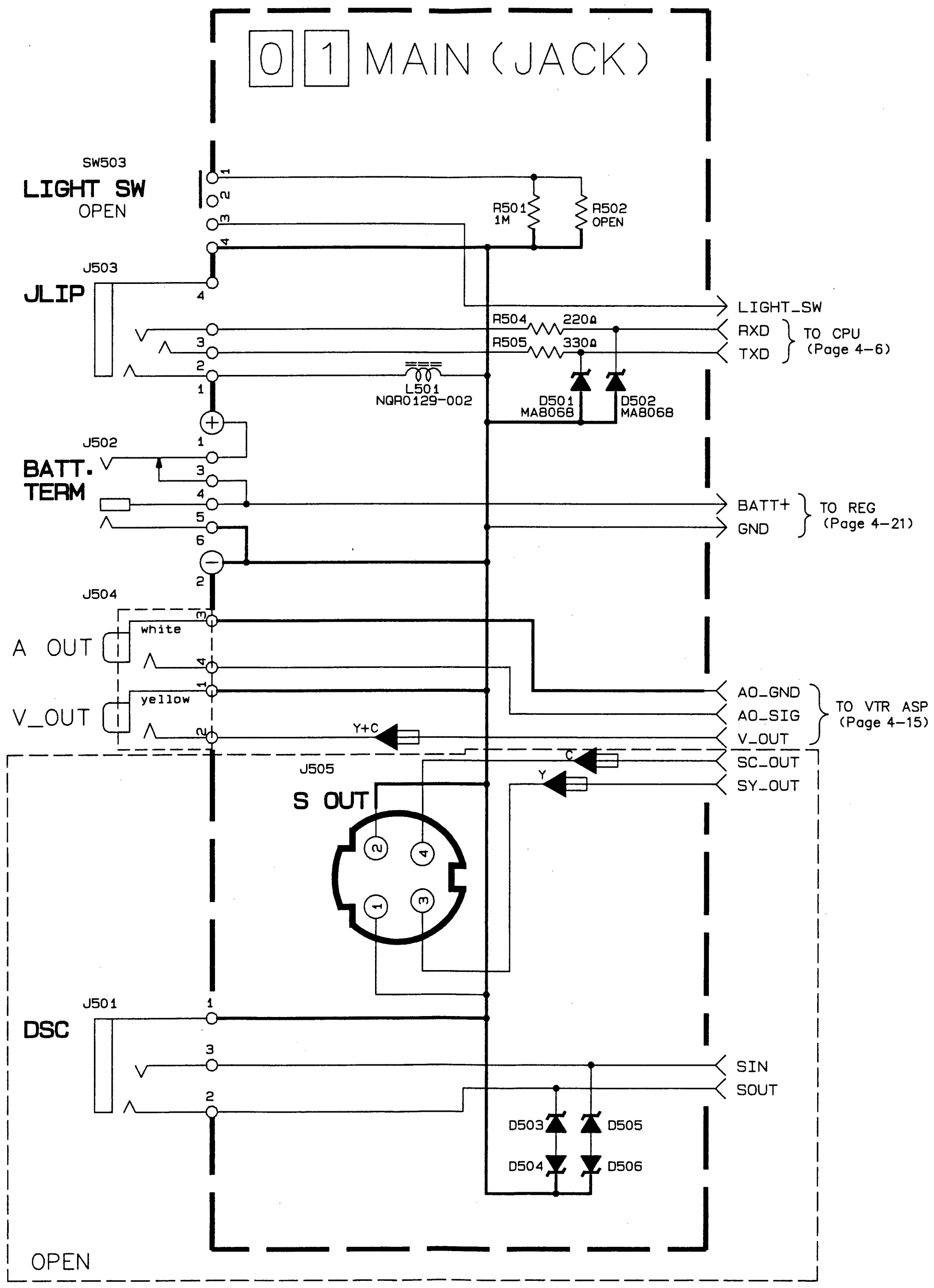


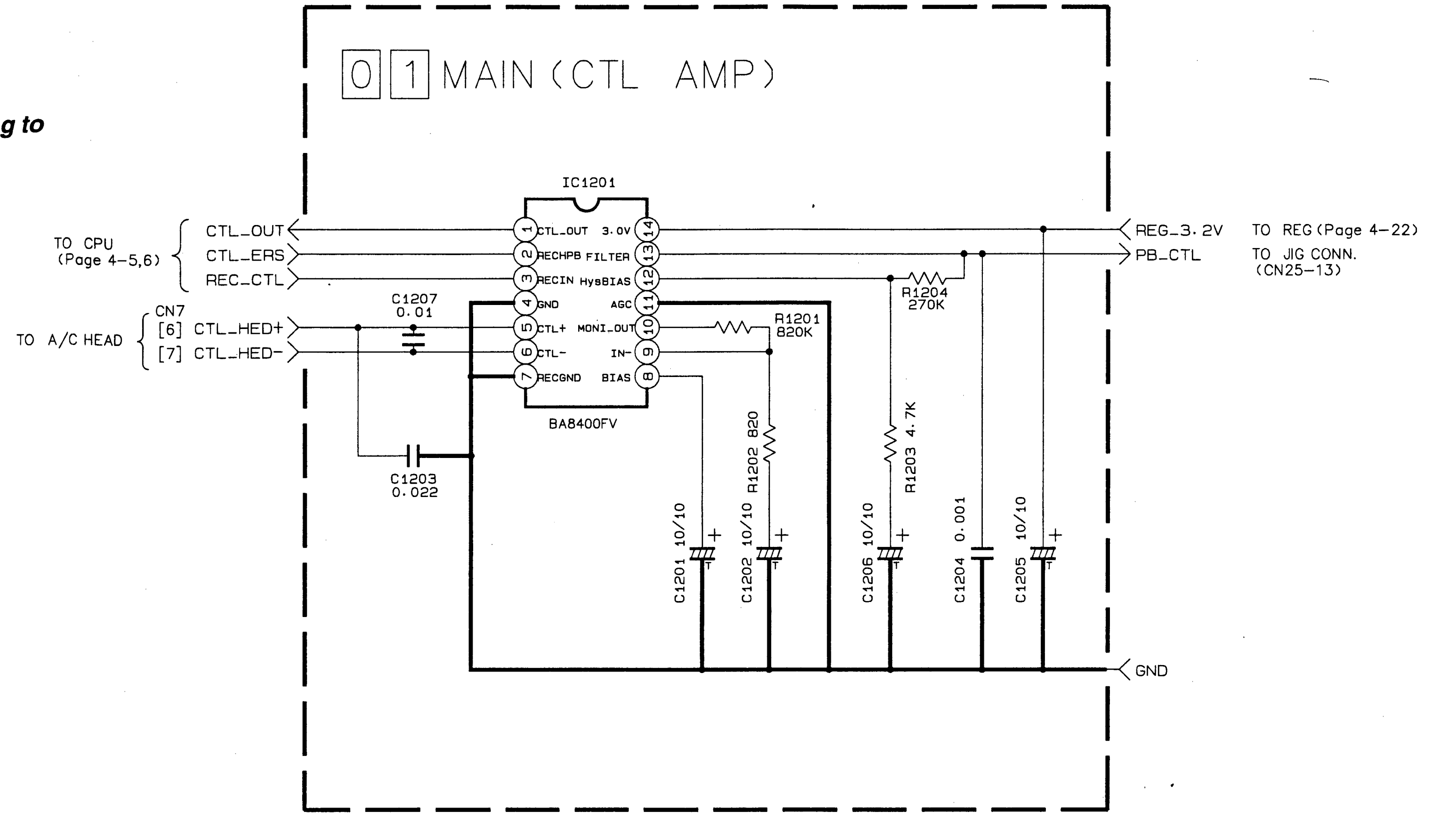
01 MAIN (CPU)
AL3.2V
IC102S-81332HG-KC-X
2.7V_RESET
IC106 IC-PST9327U-X
BATTERY CHECK
CTL_ERASE
TAPE_LED
REEL_LED
SECAM_ONLY
OEM_REG5_CTL
IC103
IC1801 OPEN
IC101 UPD703039-011
WF1
WF2
WF3
TP101
TP102
TP103
RA101
RA102
RA103
RA104
RA105
RA106
RA107
RA108
RA109
IC105 M62367GP
EEPROM
IC104 AT25080N-10SC-X
RTC
IC107 RS5C314
X101
X102
D101 SB007W030
D105 1SS355
D107 SB007W030
MCU_RST
UNREG
GND
REG_3.2V
REG_4.8V
VPP_7.8V
AL_3.2V
PWR_LED
TU_SENS
SUP_SENS
L1+
L1_GND
REC_CTL
V_RC_MUT
A_BIAS
FEH_ON
CAP_BRK
V_FF
V_OVL_A
V_OVL_B
V_PULSE
V_PLS_ON
SDET_CTL
TBC_VD
R_SAF_SW
EJECT_SW
B_PHASE
A_PHASE
OMT
VD_H
CS_CE1
FI
CFM
DRUM_FG
CAM_SW_A
CAM_SW_B
CAM_SW_C
STR_SENS
VDVHS
CAP_FG
CTL_OUT
DRUM_PG
D_PWR_ON
V_ENV
HALL_A/D
IR_DC
DEW_SENS
F_SENS
Z_SENS
EN_SENS
KEY_A
LIGHT_SW
KEY_C
ZOOM_SW
PHOTO_SW
S_VHS_SW
WAIT_L
ASTB
DSTB_L
UBEN_L
R/W_L
LBEN_L
AD15
AD14
AD13
AD12
AD11
AD10
AD9
AD8
AD7
AD6
AD5
AD4
AD3
AD2
AD1
AD0
MONI_CTL
CTL_ERS-
TXD
JIG_TX
RXD
REEL_LED
TAPE_LED
CTL_ERS
IRIS_PWM
DRUM_REF
CAP_REF
DIAL_MN
DIAL_AT
DIAL_OF
DIAL_PB
OPEN_SW
REV_SW
TRIG_SW
CAS_SW
MON_CS
MON_LOAD
VF_LOAD
LENS_CS
M_MDA_CS
CCD_SCS
CDS_CS
V_DSP_CS
V_ASP_CS
OSD_CS
CAP_SD
LENS_CLK
OSD_CLK
OSD_DATA
DSGAT
LAMP_ON
LENS_LED
IRIS_O/C
HD_H
IR_FLICK
SCK3
SO3
SI3
SCK2
SO2
SI2
DSP_RST
ENV_ADJ
FREQ_ADJ
SPK_VOL
C_GAIN
Y_GAIN
HE_OFFSET
HE_GAIN
DSC_LED
S_DET_L
VTR_RST
V_PB_H
V_REC_L
SP_L
A_MUTE
A_PB
SH_L
VF_CTL
TO REG (Page 4-22)
TO CTL AMP, MECHA MDA, VTR DSP, PRE/REC, VTR ASP, CAMERA DSP (Page 4-8,9,11,13,16,18)
TO CAMERA DSP (Page 4-18)
TO MECHA MDA, CAMERA DSP (Page 4-9,18)
TO CTL AMP, MECHA MDA, CAMERA DSP (Page 4-8,9,18)
TO PRE/REC IRIS & AF/ZOOM, REG (Page 4-13,19,22)
TO JACK (Page 4-7)
TO CTL AMP (Page 4-8)
TO MECHA MDA, IRIS & AF/ZOOM (Page 4-9,19)
TO IRIS & AF/ZOOM (Page 4-19)
TO MECHA MDA (Page 4-9)
TO VTR DSP, VTR ASP, CAMERA DSP (Page 4-11,16,18)
TO MECHA MDA, CAMERA DSP, IRIS & AF/ZOOM (Page 4-9,18,19)
TO CAMERA DSP (Page 4-18)
TO CAMERA DSP, IRIS & AF/ZOOM (Page 4-18,19)
TO MECHA MDA, VTR DSP, VTR ASP, IRIS & AF/ZOOM (Page 4-9,11,16,19)
TO PRE/REC, VTR ASP, IRIS & AF/ZOOM (Page 4-13,16,19)
TO VTR DSP, PRE/REC (Page 4-11,13)
TO REG (Page 4-22)
A
B
C
D
E
F
G
H
1
2
3
4
5

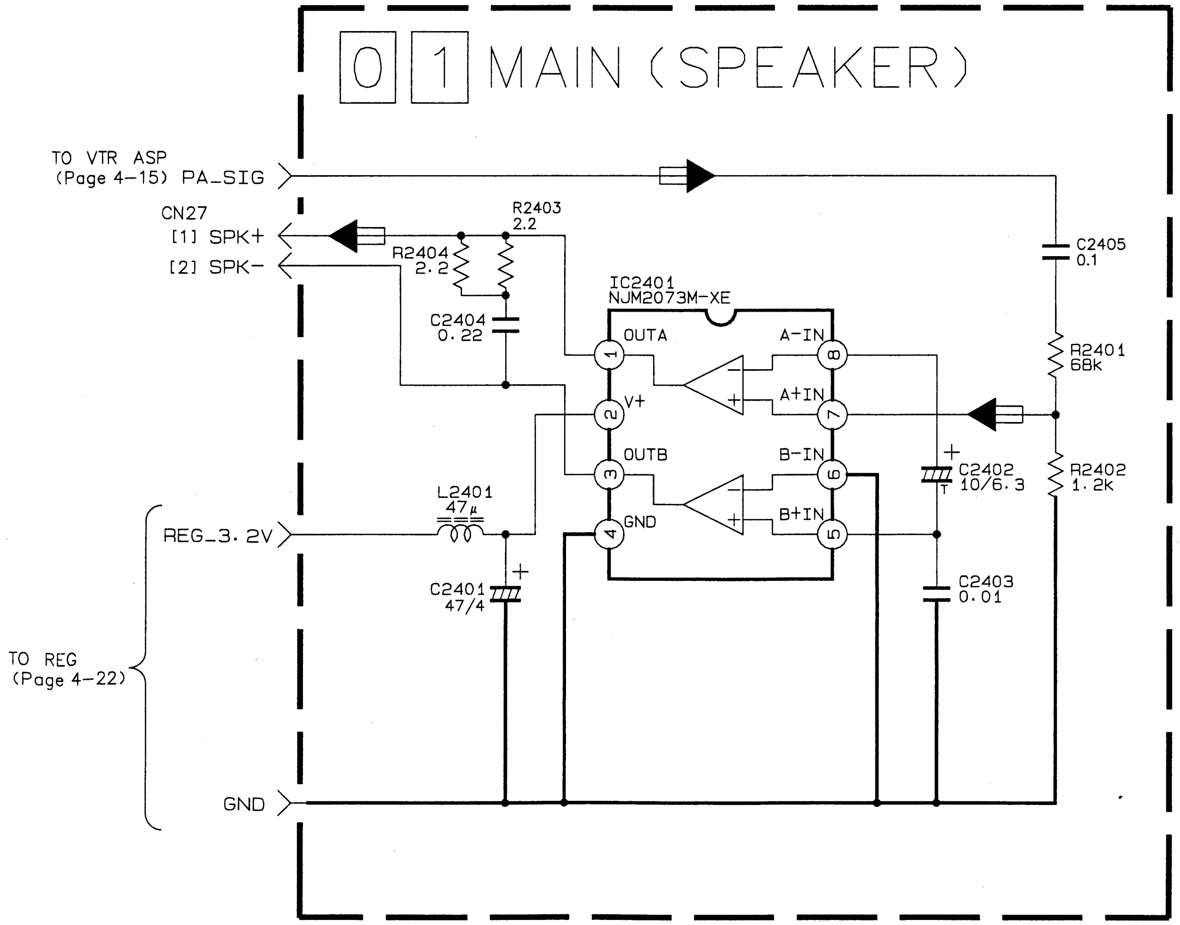
NOTE : For CPU waveforms, please refer to page 4-57.

4.3 JACK, CTL AMP AND SPEAKER SCHEMATIC DIAGRAMS

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.

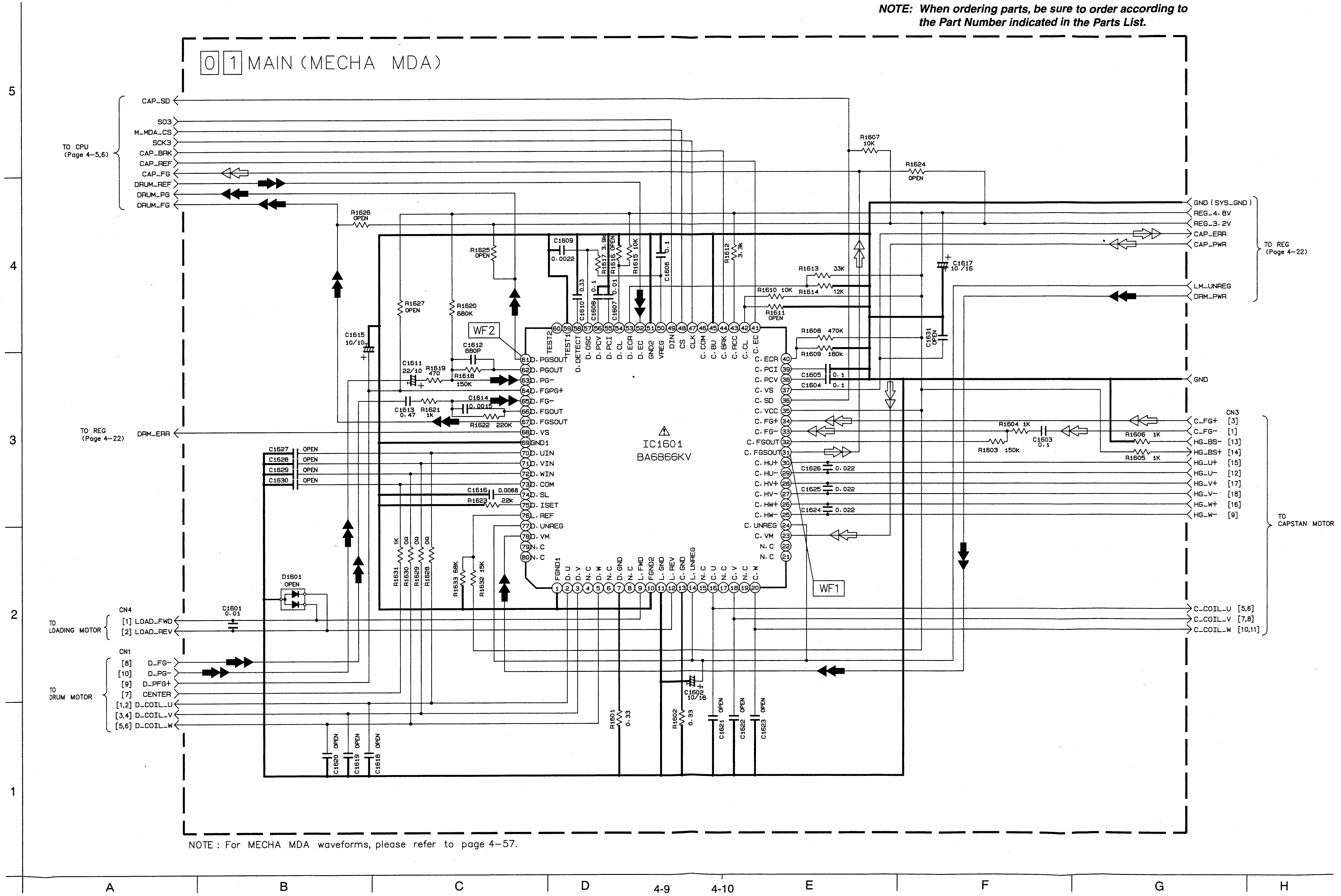

0 1 MAIN (JACK)
SW503
LIGHT SW
OPEN
J503
JLIP
J502
BATT. TERM
J504
A OUT
white
V_OUT
yellow
J505
S OUT
J501
DSC
OPEN
R501 1M
R502 OPEN
R504 220Ω
R505 330Ω
L501 NQR0129-002
D501 MA8068
D502 MA8068
D503
D504
D505
D506
Y+C
C
Y
LIGHT_SW
RXD
TXD
TO CPU (Page 4-6)
BATT+
GND
TO REG (Page 4-21)
AO_GND
AO_SIG
V_OUT
TO VTR ASP (Page 4-15)
SC_OUT
SY_OUT
SIN
SOUT


0 1 MAIN (CTL AMP)
IC1201
BA8400FV
CTL_OUT
RECHPB
RECIN
GND
CTL+
CTL-
RECGND
3.0V
FILTER
HysBIAS
AGC
MONI_OUT
IN-
BIAS
TO CPU (Page 4-5,6)
CTL_OUT
CTL_ERS
REC_CTL
CN7
TO A/C HEAD
[6] CTL_HED+
[7] CTL_HED-
C1207 0.01
C1203 0.022
R1201 820K
R1204 270K
R1202 820
R1203 4.7K
C1201 10/10
C1202 10/10
C1206 10/10
C1204 0.001
C1205 10/10
REG_3.2V
TO REG (Page 4-22)
PB_CTL
TO JIG CONN. (CN25-13)
GND


0 1 MAIN (SPEAKER)
TO VTR ASP (Page 4-15) PA_SIG
CN27
[1] SPK+
[2] SPK-
R2403 2.2
R2404 2.2
C2404 0.22
IC2401 NJM2073M-XE
OUTA
V+
OUTB
GND
A-IN
A+IN
B-IN
B+IN
C2405 0.1
R2401 68K
R2402 1.2K
C2402 10/6.3
C2403 0.01
L2401 47μ
C2401 47/4
REG_3.2V
TO REG (Page 4-22)
GND

4.4 MECHA MDA SCHEMATIC DIAGRAM

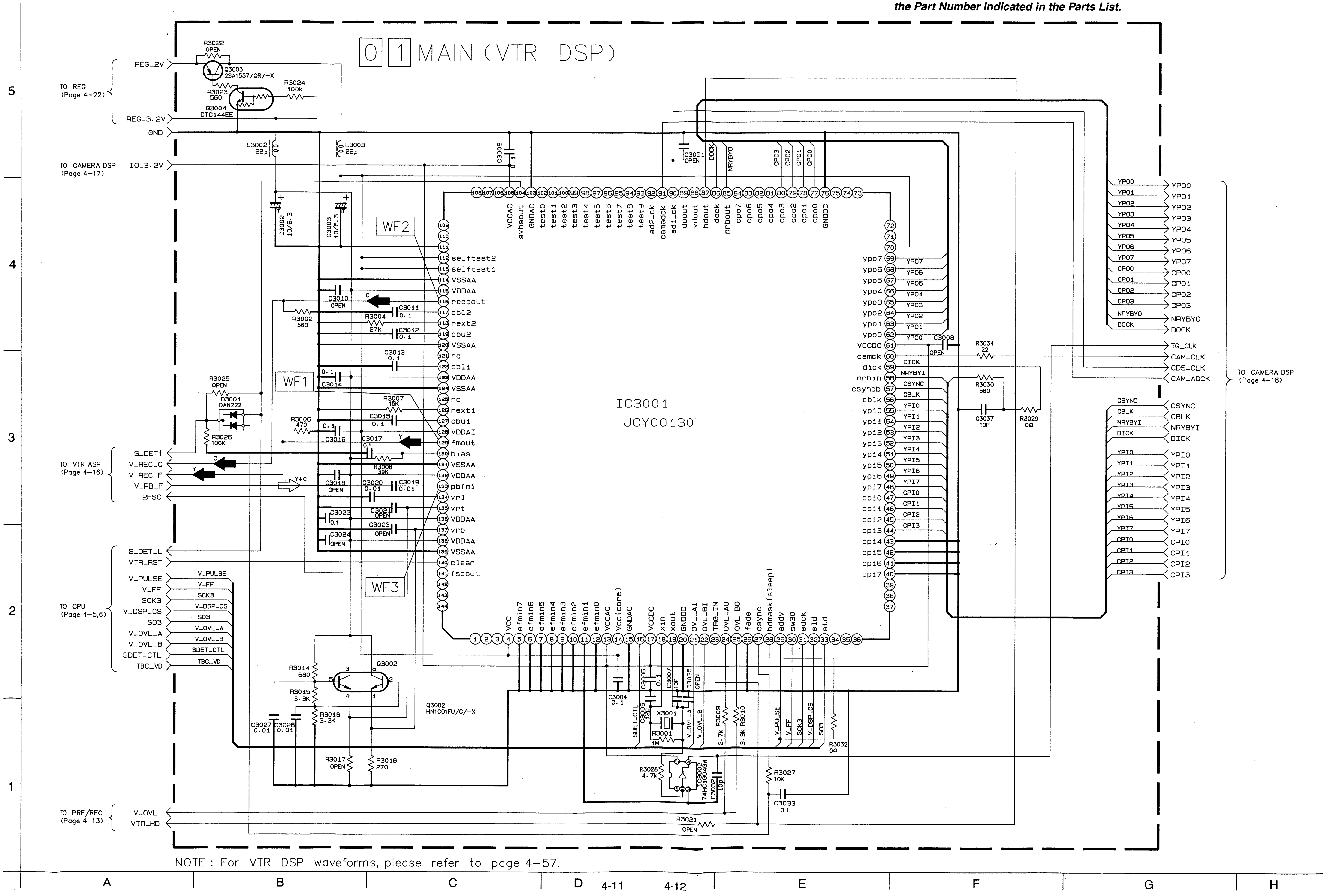
***NOTE:** When ordering parts, be sure to order according to the Part Number indicated in the Parts List.*


01 MAIN (MECHA MDA)
TO CPU (Page 4-5,6)
CAP_SD
SO3
M_MDA_CS
SCK3
CAP_BRK
CAP_REF
CAP_FG
DRUM_REF
DRUM_PG
DRUM_FG
TO REG (Page 4-22)
DRM_ERR
GND (SYS_GND)
REG_4.8V
REG_3.2V
CAP_ERR
CAP_PWR
LM_UNREG
DRM_PWR
GND
CN3
C_FG+ [3]
C_FG- [1]
HG_BS- [13]
HG_BS+ [14]
HG_U+ [15]
HG_U- [12]
HG_V+ [17]
HG_V- [18]
HG_W+ [16]
HG_W- [9]
TO CAPSTAN MOTOR
C_COIL_U [5,6]
C_COIL_V [7,8]
C_COIL_W [10,11]
CN4
TO LOADING MOTOR
[1] LOAD_FWD
[2] LOAD_REV
CN1
TO DRUM MOTOR
[8] D_FG-
[10] D_PG-
[9] D_PFG+
[7] CENTER
[1,2] D_COIL_U
[3,4] D_COIL_V
[5,6] D_COIL_W
IC1601
BA6866KV
WF1
WF2
R1607 10K
R1624 OPEN
R1626 OPEN
R1625 OPEN
R1627 OPEN
R1620 680K
C1609 0.0022
C1610 0.33
C1608 0.1
R1617 3.9K
R1616 OPEN
C1607 0.01
R1615 10K
C1606 0.1
R1612 3.3K
R1613 33K
R1614 12K
R1610 10K
R1611 OPEN
R1608 470K
R1609 180K
C1617 10/16
C1631 OPEN
C1605 0.1
C1604 0.1
C1615 10/10
C1612 680P
C1611 22/10
R1619 470
R1618 150K
C1613 0.47
R1621 1K
C1614 0.0015
R1622 220K
C1627 OPEN
C1628 OPEN
C1629 OPEN
C1630 OPEN
C1616 0.0068
R1623 22K
R1604 1K
C1603 0.1
R1603 150K
R1606 1K
R1605 1K
C1626 0.022
C1625 0.022
C1624 0.022
R1631 1K
R1630 0Ω
R1629 0Ω
R1628 0Ω
R1633 68K
R1632 15K
D1601 OPEN
C1601 0.01
C1602 10/16
R1601 0.33
R1602 0.33
C1621 OPEN
C1622 OPEN
C1623 OPEN
C1620 OPEN
C1619 OPEN
C1618 OPEN
60 TEST2
59 TEST1
58 D.DETECT
57 D.OSC
56 D.PCV
55 D.PCI
54 D.CL
53 D.ECR
52 D.EC
51 GND2
50 VREG
49 DIN
48 CS
47 CLK
46 C.COM
45 C.BU
44 C.BRK
43 C.RCC
42 C.CL
41 C.EC
61 D.PGSOUT
62 D.PGOUT
63 D.PG-
64 D.FGPG+
65 D.FG-
66 D.FGOUT
67 D.FGSOUT
68 D.VS
69 GND1
70 D.UIN
71 D.VIN
72 D.WIN
73 D.COM
74 D.SL
75 D.ISET
76 L.REF
77 D.UNREG
78 D.VM
79 N.C
80 N.C
40 C.ECR
39 C.PCI
38 C.PCV
37 C.VS
36 C.SD
35 C.VCC
34 C.FG+
33 C.FG-
32 C.FGOUT
31 C.FGSOUT
30 C.HU+
29 C.HU-
28 C.HV+
27 C.HV-
26 C.HW+
25 C.HW-
24 C.UNREG
23 C.VM
22 N.C
21 N.C
1 FGND1
2 D.U
3 D.V
4 N.C
5 D.W
6 N.C
7 D.GND
8 N.C
9 L.FWD
10 FGND2
11 L.GND
12 L.REV
13 C.GND
14 L.UNREG
15 N.C
16 C.U
17 N.C
18 C.V
19 N.C
20 C.W
5
4
3
2
1
A
B
C
D
E
F
G
H

NOTE : For MECHA MDA waveforms, please refer to page 4-57.

4.5 VTR DSP SCHEMATIC DIAGRAM

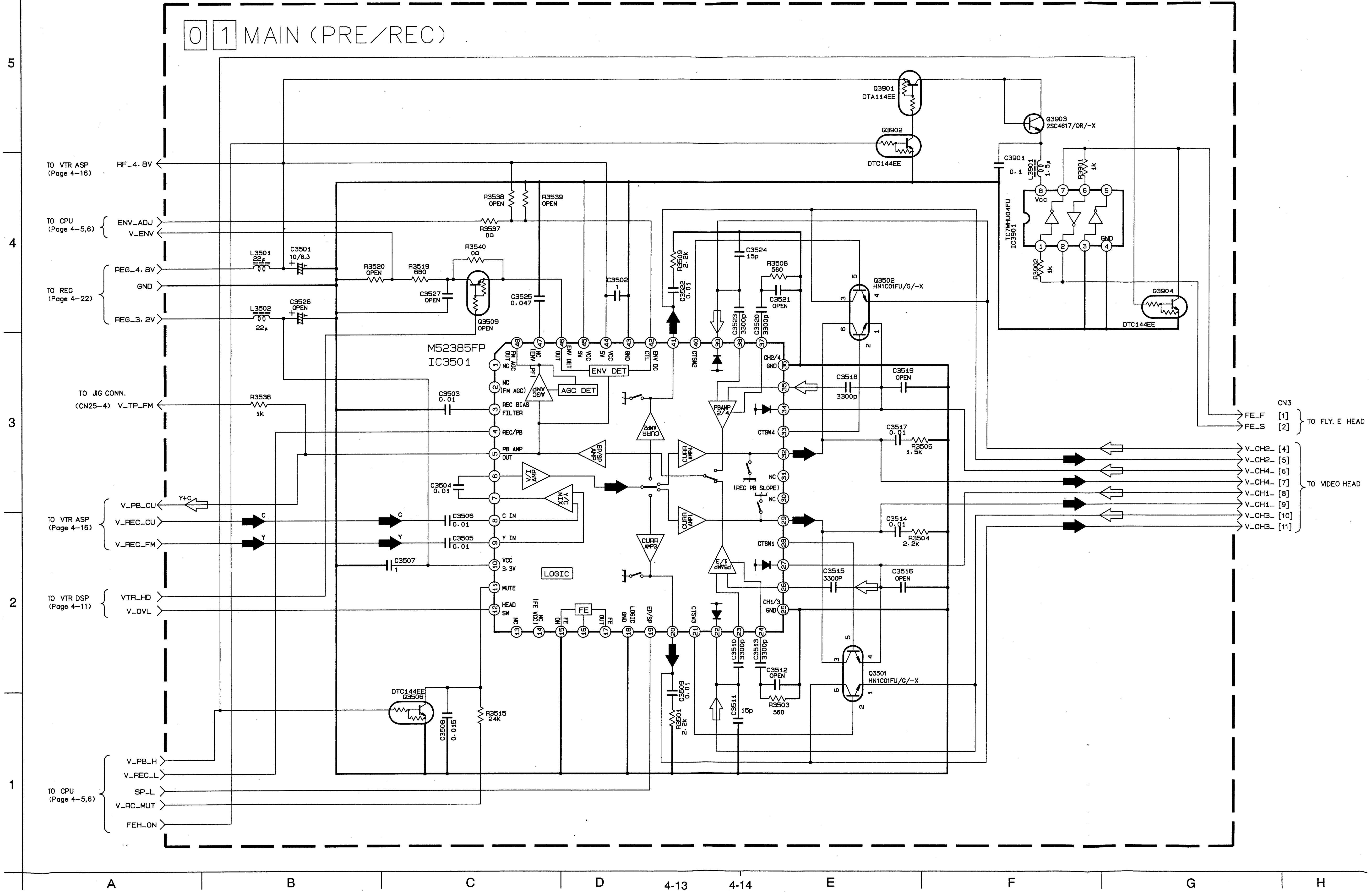
NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.


01 MAIN (VTR DSP)
IC3001
JCY00130
TO REG (Page 4–22)
REG_2V
REG_3.2V
GND
TO CAMERA DSP (Page 4–17)
IO_3.2V
TO VTR ASP (Page 4–16)
S_DET+
V_REC_C
V_REC_F
V_PB_F
2FSC
TO CPU (Page 4–5,6)
S_DET_L
VTR_RST
V_PULSE
V_FF
SCK3
V_DSP_CS
SO3
V_OVL_A
V_OVL_B
SDET_CTL
TBC_VD
TO PRE/REC (Page 4–13)
V_OVL
VTR_HD
TO CAMERA DSP (Page 4–18)
YPO0
YPO1
YPO2
YPO3
YPO4
YPO5
YPO6
YPO7
CPO0
CPO1
CPO2
CPO3
NRYBYO
DOCK
TG_CLK
CAM_CLK
CDS_CLK
CAM_ADCK
CSYNC
CBLK
NRYBYI
DICK
YPI0
YPI1
YPI2
YPI3
YPI4
YPI5
YPI6
YPI7
CPI0
CPI1
CPI2
CPI3
R3022 OPEN
Q3003 2SA1557/QR/–X
R3023 560
Q3004 DTC144EE
R3024 100k
L3002 22μ
L3003 22μ
C3009 0.1
C3031 OPEN
C3002 10/6.3
C3003 10/6.3
WF1
WF2
WF3
C3010 OPEN
C3011 0.1
R3002 560
R3004 27k
C3012 0.1
C3013 0.1
C3014 0.1
R3025 OPEN
D3001 DAN222
R3026 100K
R3006 470
R3007 15K
C3015 0.1
C3016 0.1
C3017 0.1
R3008 39K
C3018 OPEN
C3020 0.01
C3019 0.01
C3022 0.1
C3021 OPEN
C3023 OPEN
C3024 OPEN
R3014 680
R3015 3.3K
R3016 3.3K
Q3002 HN1C01FU/G/–X
C3027 0.01
C3028 0.01
R3017 OPEN
R3018 270
C3004 0.1
C3005 0.1
C3006 12p
C3007 10P
C3035 OPEN
X3001
R3001 1M
R3009 2.7k
R3010 3.3k
R3028 4.7k
IC3002 74HC1G04GW
C3032 10p
R3027 10K
C3033 0.1
R3032 0Ω
R3021 OPEN
C3008 OPEN
R3034 22
R3030 560
C3037 10P
R3029 0Ω
selftest2
selftest1
VSSAA
VDDAA
reccout
cbl2
rext2
cbu2
nc
cbl1
rext1
cbu1
VDDAI
fmout
bias
pbfmi
vrl
vrt
vrb
clear
fscout
VCCAC
svhsout
GNDAC
test0
test1
test2
test3
test4
test5
test6
test7
test8
test9
ad2_ck
camadck
ad1_ck
doout
vdout
hdout
dock
nrbout
cpo7
cpo6
cpo5
cpo4
cpo3
cpo2
cpo1
cpo0
GNDDC
ypo7
ypo6
ypo5
ypo4
ypo3
ypo2
ypo1
ypo0
VCCDC
camck
dick
nrbin
csyncb
cblk
ypi0
ypi1
ypi2
ypi3
ypi4
ypi5
ypi6
ypi7
cpi0
cpi1
cpi2
cpi3
cpi4
cpi5
cpi6
cpi7
VCC
efmin7
efmin6
efmin5
efmin4
efmin3
efmin2
efmin1
efmin0
VCCAC
Vcc(core)
GNDAC
VCCDC
xin
xout
GNDDC
OVL_AI
OVL_BI
TRG_IN
OVL_AO
OVL_BO
fade
csync
hdmask(sleep)
addv
sw30
sdck
sld
std
C
Y
Y+C
1
2
3
4
5
A
B
C
D
E
F
G
H

NOTE : For VTR DSP waveforms, please refer to page 4–57.

4.6 PRE/REC SCHEMATIC DIAGRAM

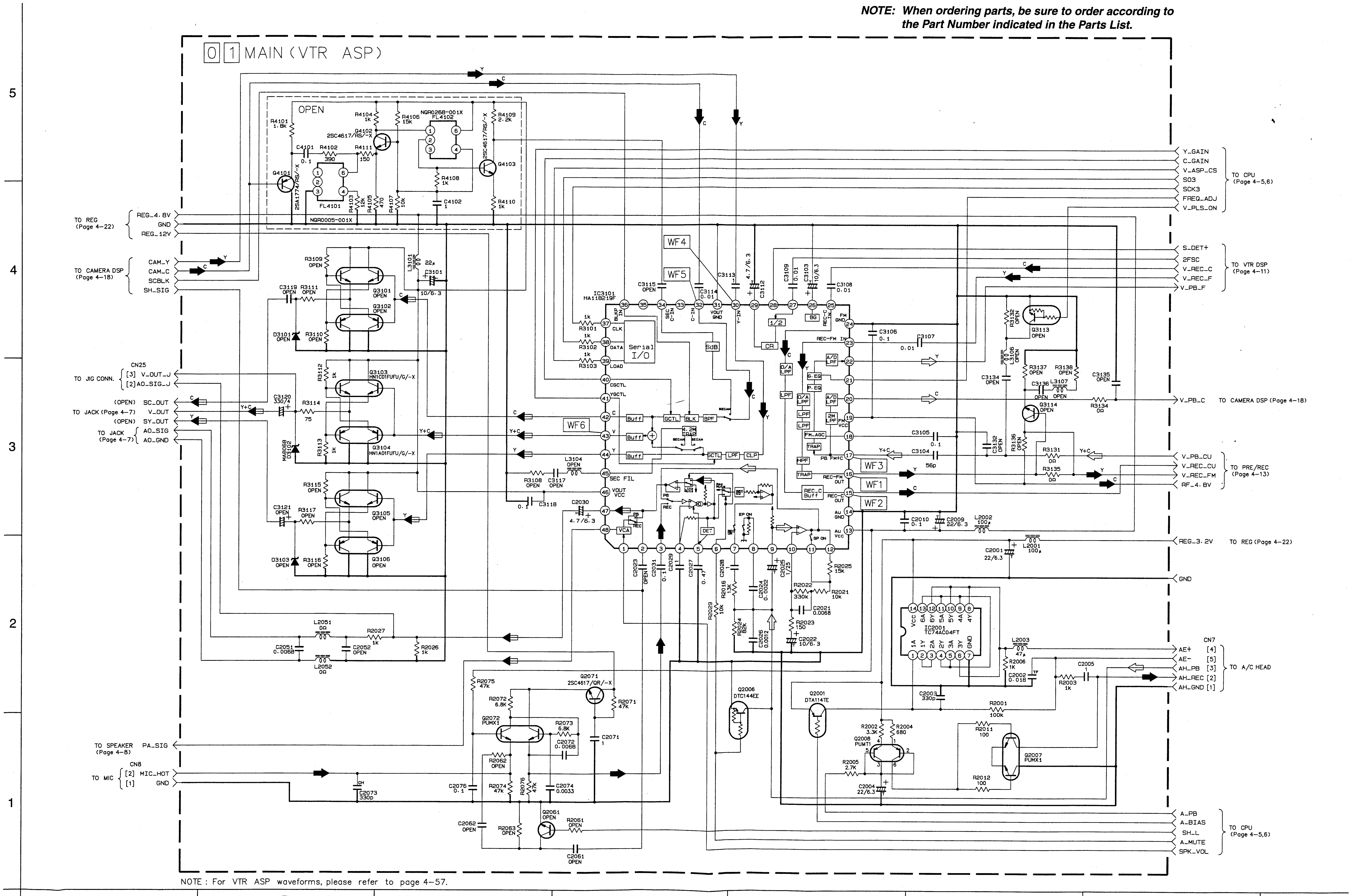
***NOTE:** When ordering parts, be sure to order according to the Part Number indicated in the Parts List.*



0 1 MAIN (PRE/REC)
TO VTR ASP (Page 4-16) RF_4.8V
TO CPU (Page 4-5,6) ENV_ADJ V_ENV
TO REG (Page 4-22) REG_4.8V GND REG_3.2V
TO JIG CONN. (CN25-4) V_TP_FM
TO VTR ASP (Page 4-16) V_PB_CU V_REC_CU V_REC_FM
Y+C
C
Y
TO VTR DSP (Page 4-11) VTR_HD V_OVL
TO CPU (Page 4-5,6) V_PB_H V_REC_L SP_L V_RC_MUT FEH_ON
L3501 22μ
L3502 22μ
C3501 10/6.3
C3526 OPEN
R3520 OPEN
R3519 680
R3540 0Ω
C3527 OPEN
Q3509 OPEN
R3538 OPEN
R3539 OPEN
R3537 0Ω
C3525 0.047
C3502 1
R3536 1k
C3503 0.01
C3504 0.01
C3506 0.01
C3505 0.01
C3507 1
M52385FP IC3501
ENV DET
AGC DET
AGC AMP
LOGIC
FE
CURR AMP2
CURR AMP4
CURR AMP1
CURR AMP3
PBAMP 2/4
PBAMP 1/3
EP/SP AMP
Y/C AMP
Y/C MIX
REC PB SLOPE
FM AGC OUT
NC (FM AGC)
REC BIAS FILTER
REC/PB
PB AMP OUT
C IN
Y IN
VCC 3.3V
MUTE
HEAD SW
CH2/4 GND
CH1/3 GND
CTSW4
CTSW1
CTSW2
CTSW3
NC
DTC144EE Q3506
C3508 0.015
R3515 24K
R3509 2.2K
C3522 0.01
C3524 15p
R3508 560
C3521 OPEN
C3523 3300p
C3520 3300p
C3518 3300p
C3519 OPEN
C3517 0.01
R3506 1.5k
C3514 0.01
R3504 2.2k
C3515 3300P
C3516 OPEN
C3509 0.01
R3501 2.2K
C3511 15p
C3510 3300p
C3513 3300p
C3512 OPEN
R3503 560
Q3502 HN1C01FU/G/-X
Q3501 HN1C01FU/G/-X
Q3901 DTA114EE
Q3902 DTC144EE
Q3903 2SC4617/QR/-X
Q3904 DTC144EE
C3901 0.1
L3901 1.5μ
R3901 1k
R3902 1k
IC7WHU04FU IC3901
Vcc
GND
CN3
FE_F [1]
FE_S [2]
TO FLY. E HEAD
V_CH2- [4]
V_CH2- [5]
V_CH4- [6]
V_CH4- [7]
V_CH1- [8]
V_CH1- [9]
V_CH3- [10]
V_CH3- [11]
TO VIDEO HEAD
1
2
3
4
5
A
B
C
D
E
F
G
H

4.7 VTR ASP SCHEMATIC DIAGRAM

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.

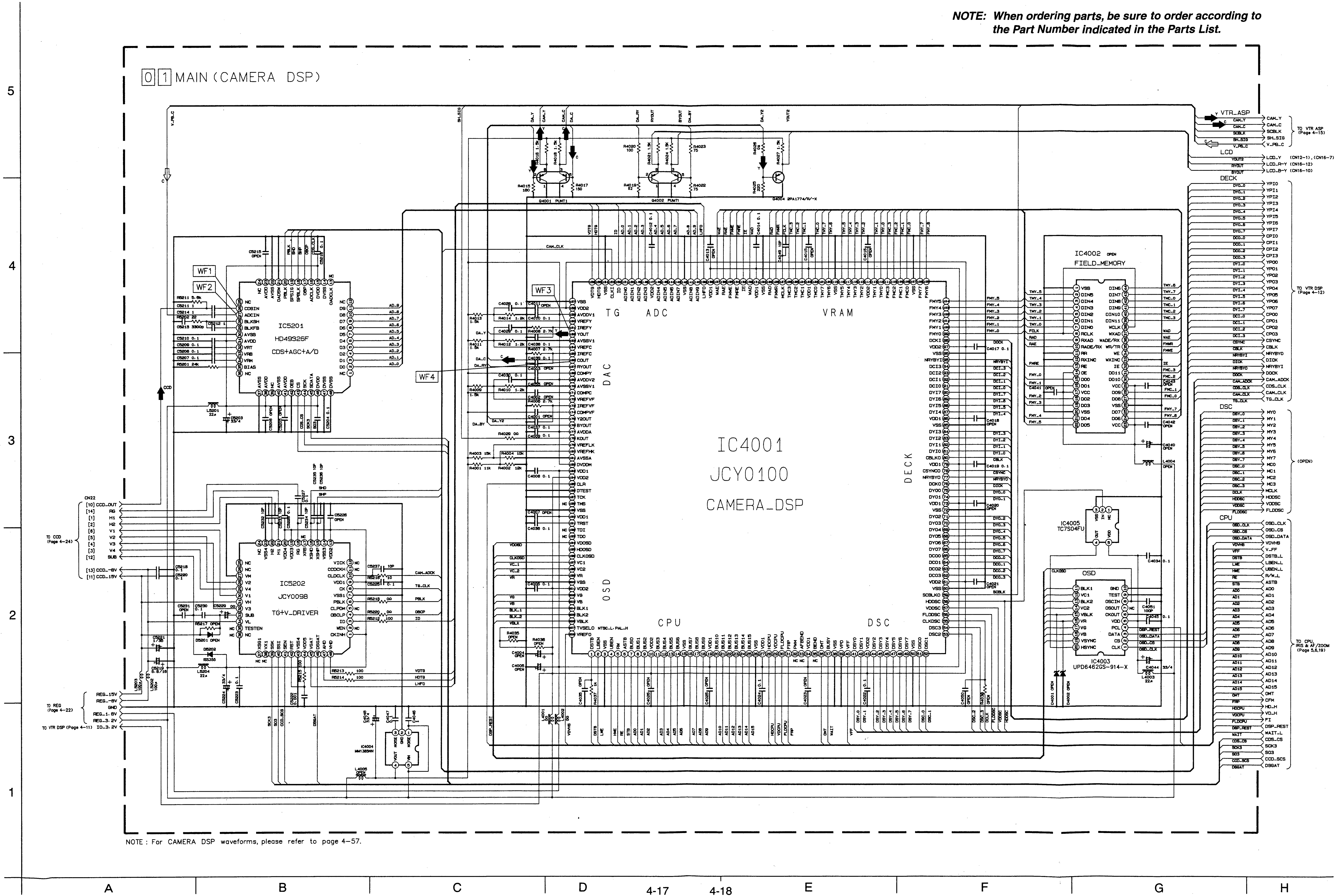


01 MAIN (VTR ASP)
OPEN
TO REG (Page 4-22)
REG_4.8V
GND
REG_12V
TO CAMERA DSP (Page 4-18)
CAM_Y
CAM_C
SCBLK
SH_SIG
TO JIG CONN.
CN25
[3] V_OUT_J
[2] AO_SIG_J
TO JACK (Page 4-7)
(OPEN) SC_OUT
V_OUT
(OPEN) SY_OUT
TO JACK (Page 4-7)
AO_SIG
AO_GND
TO SPEAKER (Page 4-8)
PA_SIG
TO MIC
CN8
[2] MIC_HOT
[1] GND
Y_GAIN
C_GAIN
V_ASP_CS
SO3
SCK3
FREQ_ADJ
V_PLS_ON
TO CPU (Page 4-5,6)
S_DET+
2FSC
V_REC_C
V_REC_F
V_PB_F
TO VTR DSP (Page 4-11)
V_PB_C
TO CAMERA DSP (Page 4-18)
V_PB_CU
V_REC_CU
V_REC_FM
RF_4.8V
TO PRE/REC (Page 4-13)
REG_3.2V
TO REG (Page 4-22)
GND
CN7
AE+ [4]
AE- [5]
AH_PB [3]
AH_REC [2]
AH_GND [1]
TO A/C HEAD
A_PB
A_BIAS
SH_L
A_MUTE
SPK_VOL
TO CPU (Page 4-5,6)
IC3101 HA118219F
IC2001 TC74AC04FT
Serial I/O
WF1
WF2
WF3
WF4
WF5
WF6
Q4101 2SA1774/RS/-X
Q4102 2SC4617/RS/-X
Q4103 2SC4617/RS/-X
FL4101 NQR0005-001X
FL4102 NQR0268-001X
Q3101 OPEN
Q3102 OPEN
Q3103 HN1C01FUFU/G/-X
Q3104 HN1A01FUFU/G/-X
Q3105 OPEN
Q3106 OPEN
Q3113 OPEN
Q3114 OPEN
Q2001 DTA114TE
Q2006 DTC144EE
Q2007 PUMX1
Q2008 PUMT1
Q2061 OPEN
Q2071 2SC4617/QR/-X
Q2072 PUMX1
1
2
3
4
5
A
B
C
D
E
F
G
H

NOTE : For VTR ASP waveforms, please refer to page 4-57.

4.8 CAMERA DSP SCHEMATIC DIAGRAM

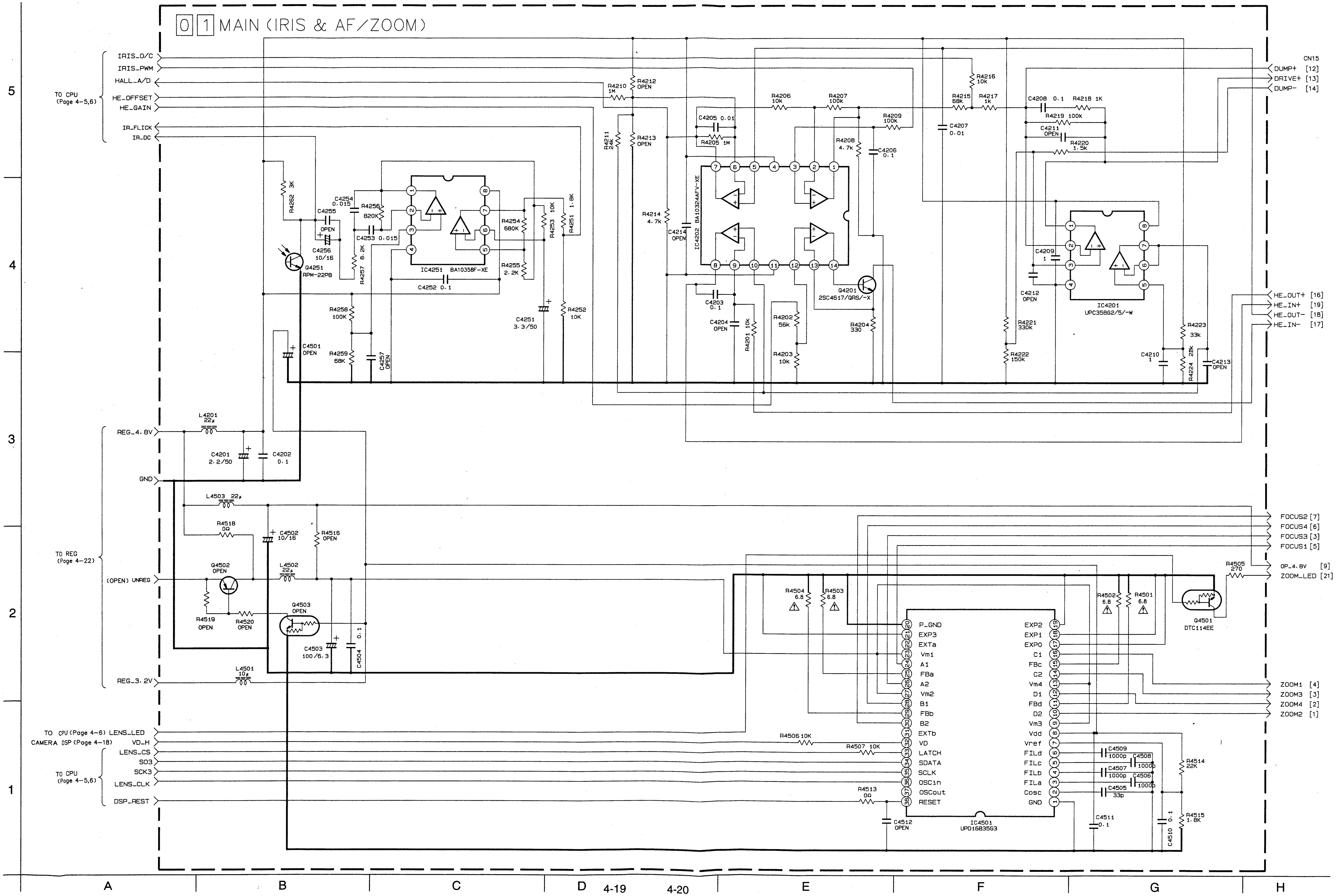
NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.


01 MAIN (CAMERA DSP)
IC5201
HD49326F
CDS+AGC+A/D
IC5202
JCY0098
TG+V_DRIVER
IC4001
JCY0100
CAMERA_DSP
TG
ADC
VRAM
DAC
OSD
CPU
DSC
DECK
IC4002 OPEN
FIELD_MEMORY
IC4003
UPD6462GS-914-X
IC4004
MM1385MN
IC4005
TC7S04FU
Q4001 PUMT1
Q4002 PUMT1
Q4004 2PA1774/R/-X
WF1
WF2
WF3
WF4
VTR_ASP
CAM_Y
CAM_C
SCBLK
SH_SIG
V_PB_C
TO VTR ASP (Page 4-15)
LCD
LCD_Y (CN12-1), (CN16-7)
LCD_R-Y (CN16-12)
LCD_B-Y (CN16-10)
DECK
TO VTR DSP (Page 4-12)
DSC
(OPEN)
CPU
TO CPU, IRIS & AF/ZOOM (Page 5,6,19)
CN22
TO CCD (Page 4-24)
CCD_OUT
RG
H1
H2
V1
V2
V3
V4
SUB
CCD_-8V
CCD_15V
TO REG (Page 4-22)
REG_15V
REG_-8V
GND
REG_1.8V
REG_3.2V
TO VTR DSP (Page 4-11)
IO_3.2V
5
4
3
2
1
A
B
C
D
E
F
G
H

NOTE : For CAMERA DSP waveforms, please refer to page 4-57.

4.9 IRIS & AF/ZOOM SCHEMATIC DIAGRAM

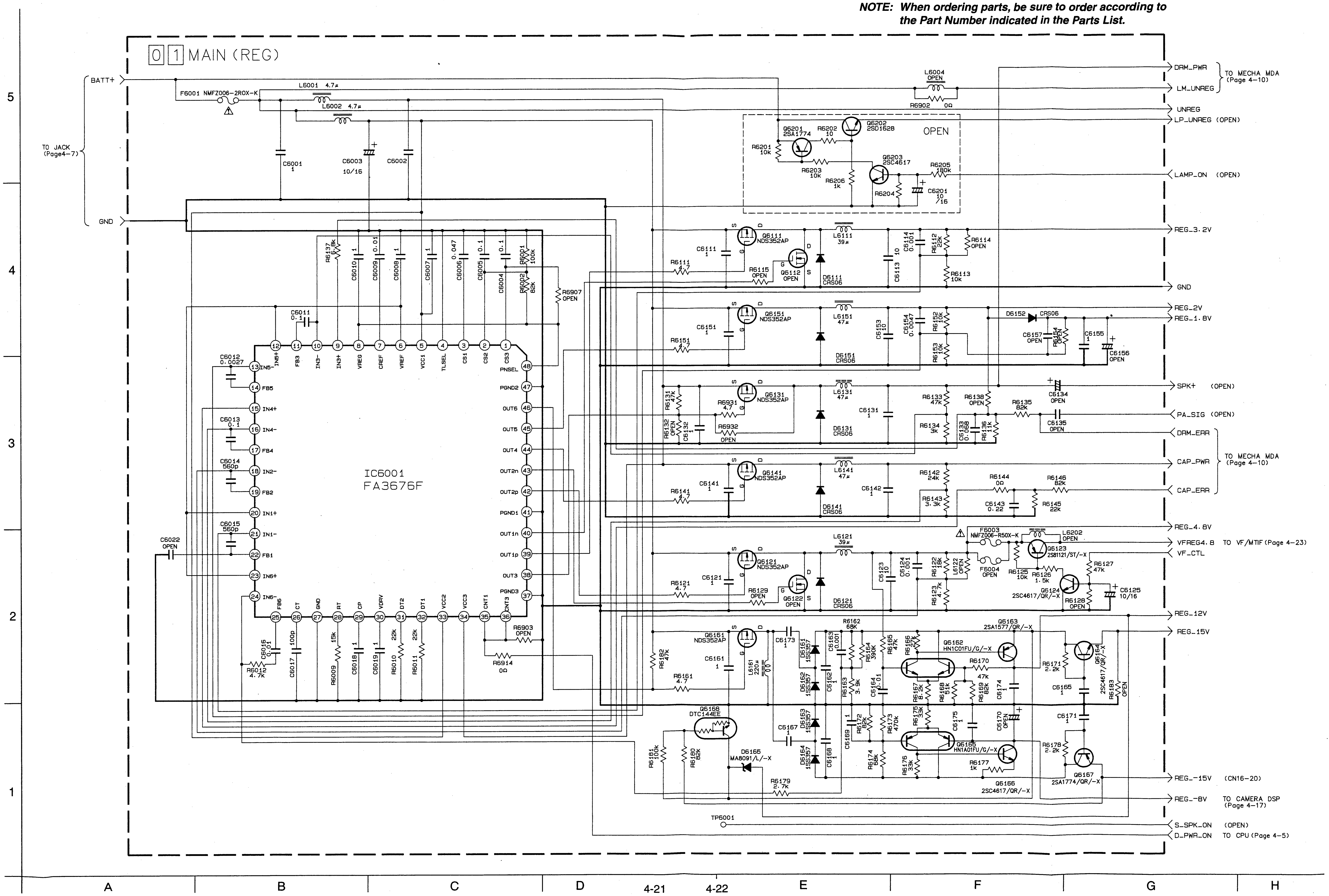
NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



0 1 MAIN (IRIS & AF/ZOOM)
TO CPU (Page 4-5,6)
IRIS_O/C
IRIS_PWM
HALL_A/D
HE_OFFSET
HE_GAIN
IR_FLICK
IR_DC
TO REG (Page 4-22)
REG_4.8V
GND
(OPEN) UNREG
REG_3.2V
TO CPU (Page 4-6) LENS_LED
CAMERA DSP (Page 4-18) VD_H
TO CPU (Page 4-5,6)
LENS_CS
SO3
SCK3
LENS_CLK
DSP_REST
CN15
DUMP+ [12]
DRIVE+ [13]
DUMP- [14]
HE_OUT+ [16]
HE_IN+ [19]
HE_OUT- [18]
HE_IN- [17]
FOCUS2 [7]
FOCUS4 [6]
FOCUS3 [3]
FOCUS1 [5]
OP_4.8V [9]
ZOOM_LED [21]
ZOOM1 [4]
ZOOM3 [3]
ZOOM4 [2]
ZOOM2 [1]
IC4251 BA10358F-XE
IC4202 BA10324AFV-XE
IC4201 UPC358G2/5/-W
IC4501 UPD16835G3
Q4251 RPM-22PB
Q4201 2SC4617/QRS/-X
Q4501 DTC114EE
Q4502 OPEN
Q4503 OPEN
L4201 22μ
L4503 22μ
L4502 22μ
L4501 10μ
R4262 3K
C4254 0.015
C4255 OPEN
R4256 820K
C4253 0.015
C4256 10/16
R4257 8.2K
C4252 0.1
R4254 680K
R4255 2.2K
R4253 10K
R4251 1.8K
C4251 3.3/50
R4252 10K
R4258 100K
R4259 68K
C4257 OPEN
C4501 OPEN
C4201 2.2/50
C4202 0.1
R4210 1M
R4212 OPEN
R4211 24K
R4213 OPEN
R4214 4.7k
C4214 OPEN
C4205 0.01
R4205 1M
R4206 10k
R4207 100k
R4209 100k
R4208 4.7k
C4206 0.1
C4203 0.1
C4204 OPEN
R4201 10k
R4202 56k
R4203 10k
R4204 330
R4216 10k
R4215 68k
R4217 1K
C4207 0.01
C4208 0.1
R4218 1K
R4219 100k
C4211 OPEN
R4220 1.5k
C4209 1
C4212 OPEN
R4221 330K
R4222 150K
R4223 33K
C4210 1
R4224 22k
C4213 OPEN
R4518 0Ω
C4502 10/16
R4516 OPEN
R4519 OPEN
R4520 OPEN
C4503 100/6.3
C4504 0.1
R4504 6.8
R4503 6.8
R4502 6.8
R4501 6.8
R4505 270
R4506 10K
R4507 10K
R4513 0Ω
C4512 OPEN
C4509 1000p
C4508 1000p
C4507 1000p
C4506 1000p
C4505 33p
C4511 0.1
C4510 0.1
R4514 22K
R4515 1.8K
P_GND
EXP3
EXTa
Vm1
A1
FBa
A2
Vm2
B1
FBb
B2
EXTb
VD
LATCH
SDATA
SCLK
OSCin
OSCout
RESET
EXP2
EXP1
EXP0
C1
FBc
C2
Vm4
D1
FBd
D2
Vm3
Vdd
Vref
FILd
FILc
FILb
FILa
Cosc
GND
5
4
3
2
1
A
B
C
D
E
F
G
H

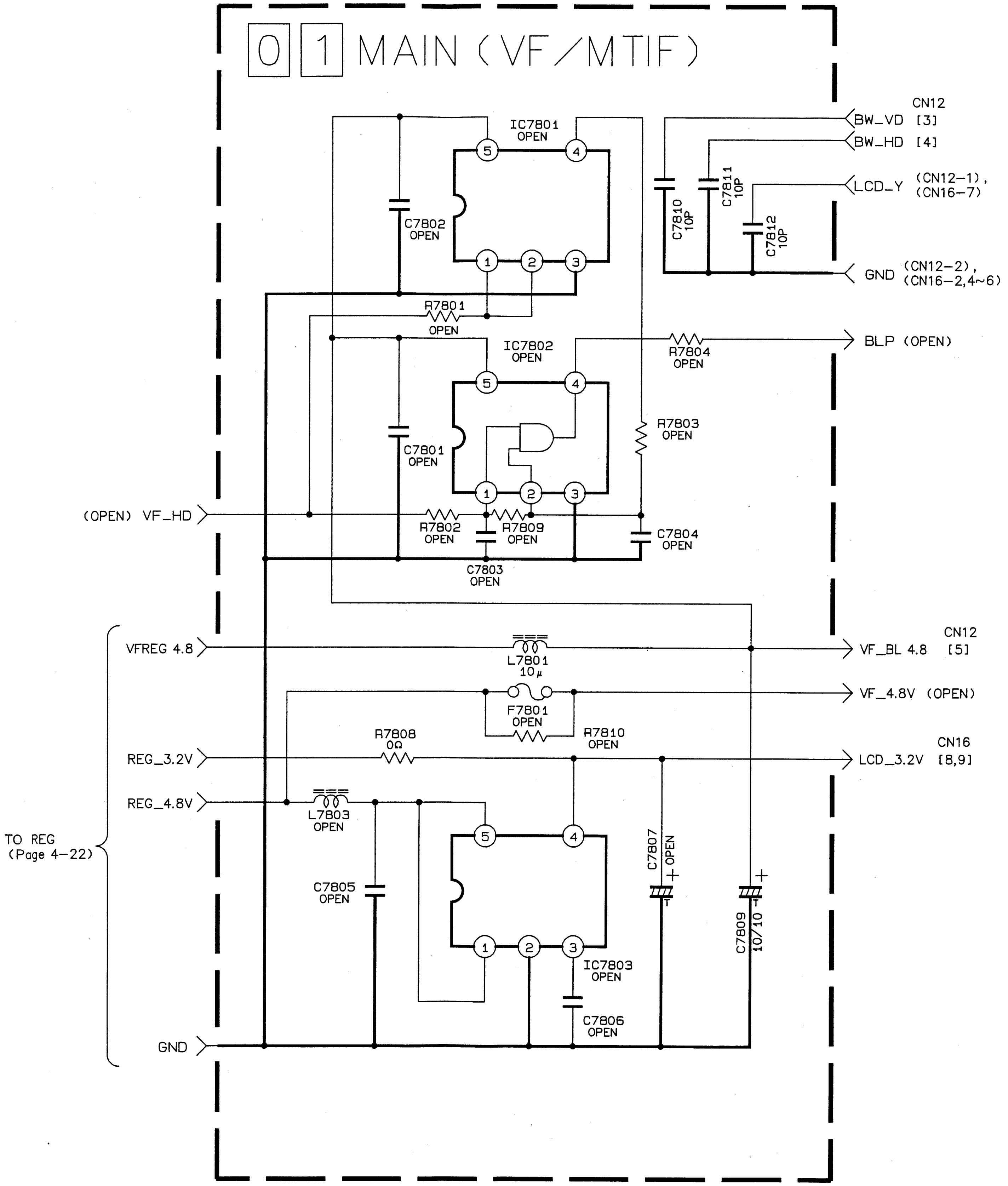
4.10 REGULATOR SCHEMATIC DIAGRAM

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.



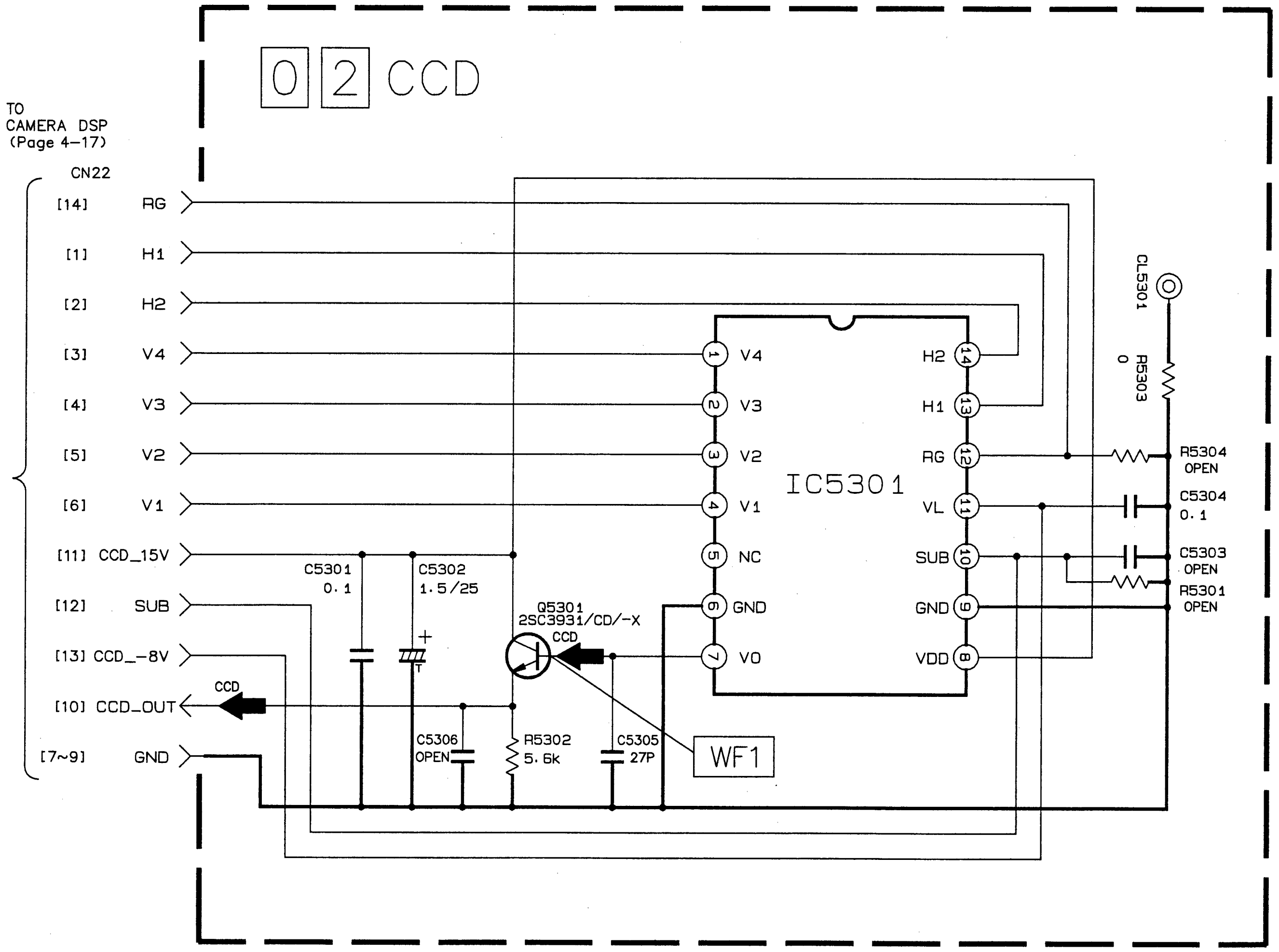
0 1 MAIN (REG)
BATT+
GND
TO JACK (Page4-7)
F6001 NMFZ006-2ROX-K
L6001 4.7µ
L6002 4.7µ
C6001 1
C6003 10/16
C6002
L6004 OPEN
R6902 0Ω
DRM_PWR
LM_UNREG
TO MECHA MDA (Page 4-10)
UNREG
LP_UNREG (OPEN)
LAMP_ON (OPEN)
OPEN
Q6201 2SA1774
Q6202 2SD1628
Q6203 2SC4617
R6201 10k
R6202 10
R6203 10k
R6204
R6205 180k
R6206 1k
C6201 10/16
REG_3.2V
GND
REG_2V
REG_1.8V
SPK+ (OPEN)
PA_SIG (OPEN)
DRM_ERR
CAP_PWR
CAP_ERR
TO MECHA MDA (Page 4-10)
REG_4.8V
VFREG4.8 TO VF/MTIF (Page 4-23)
VF_CTL
REG_12V
REG_15V
REG_-15V (CN16-20)
REG_-8V TO CAMERA DSP (Page 4-17)
S_SPK_ON (OPEN)
D_PWR_ON TO CPU (Page 4-5)
TP6001
IC6001 FA3676F
Q6111 NDS352AP
Q6112 OPEN
L6111 39µ
D6111 CRS06
R6111 4.7
R6112 22k
R6113 10k
R6114 OPEN
R6115 OPEN
C6111 1
C6113 10
C6114 0.001
Q6151 NDS352AP
L6151 47µ
D6151 CRS06
D6152 CRS06
R6151 4.7
C6151 1
C6153 10
C6154 0.0047
C6155 1
C6156 OPEN
C6157 OPEN
Q6131 NDS352AP
L6131 47µ
D6131 CRS06
R6131 47k
R6132 OPEN
R6133 47k
R6134 3k
R6135 82k
R6136 11k
R6138 OPEN
R6931 4.7
R6932 OPEN
C6131 1
C6132 1
C6133 0.068
C6134 OPEN
C6135 OPEN
Q6141 NDS352AP
L6141 47µ
D6141 CRS06
R6141 4.7
R6142 24k
R6143 3.3k
R6144 0Ω
R6145 22k
R6146 82k
C6141 1
C6142 1
C6143 0.22
Q6121 NDS352AP
Q6122 OPEN
L6121 39µ
D6121 CRS06
R6121 4.7
R6129 OPEN
C6121 1
C6123 10
C6124 0.001
F6003 NMFZ006-R50X-K
F6004 OPEN
L6202 OPEN
Q6123 2SB1121/ST/-X
Q6124 2SC4617/QR/-X
R6125 10k
R6126 1.5k
R6127 47k
R6128 OPEN
C6125 10/16
Q6161 NDS352AP
L6161 220µ
R6161 4.7
R6162 68K
R6182 47k
C6161 1
C6173 1
Q6162 HN1C01FU/G/-X
Q6163 2SA1577/QR/-X
Q6164 2SC4617/QR/-X
Q6165 HN1A01FU/G/-X
Q6166 2SC4617/QR/-X
Q6167 2SA1774/QR/-X
Q6168 DTC144EE
D6161 1SS357
D6162 1SS357
D6163 1SS357
D6164 1SS357
D6165 MA8091/L/-X
R6170 47k
R6171 2.2K
R6177 1K
R6178 2.2K
R6179 2.7K
R6180 68K
R6181 100K
C6165 1
C6171 1
C6167 1
R6012 4.7K
C6016 0.01
C6017 100p
R6009 15k
C6018 1
C6019 1
R6010 22k
R6011 22k
R6903 OPEN
R6914 0Ω
C6022 OPEN
C6012 0.0027
C6013 0.1
C6014 560p
C6015 560p
C6011 0.1
R6137 6.8k
R6907 OPEN
C6010 1
C6009 0.01
C6008 1
C6007 1
C6006 0.047
C6005 0.1
C6004 0.1
R6001 100k
R6002 82k
A
B
C
D
E
F
G
H
1
2
3
4
5

4.11 VF/MT IF AND CCD SCHEMATIC DIAGRAMS


01 MAIN (VF/MTIF)
IC7801 OPEN
C7802 OPEN
R7801 OPEN
IC7802 OPEN
C7801 OPEN
R7802 OPEN
R7809 OPEN
C7803 OPEN
R7803 OPEN
R7804 OPEN
C7804 OPEN
C7810 10P
C7811 10P
C7812 10P
CN12
BW_VD [3]
BW_HD [4]
LCD_Y (CN12-1), (CN16-7)
GND (CN12-2), (CN16-2,4~6)
BLP (OPEN)
(OPEN) VF_HD
VFREG 4.8
L7801 10µ
VF_BL 4.8 [5]
F7801 OPEN
VF_4.8V (OPEN)
R7808 0Ω
R7810 OPEN
REG_3.2V
CN16
LCD_3.2V [8,9]
REG_4.8V
L7803 OPEN
C7805 OPEN
IC7803 OPEN
C7806 OPEN
C7807 OPEN
C7809 10/10
TO REG (Page 4-22)
GND

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.

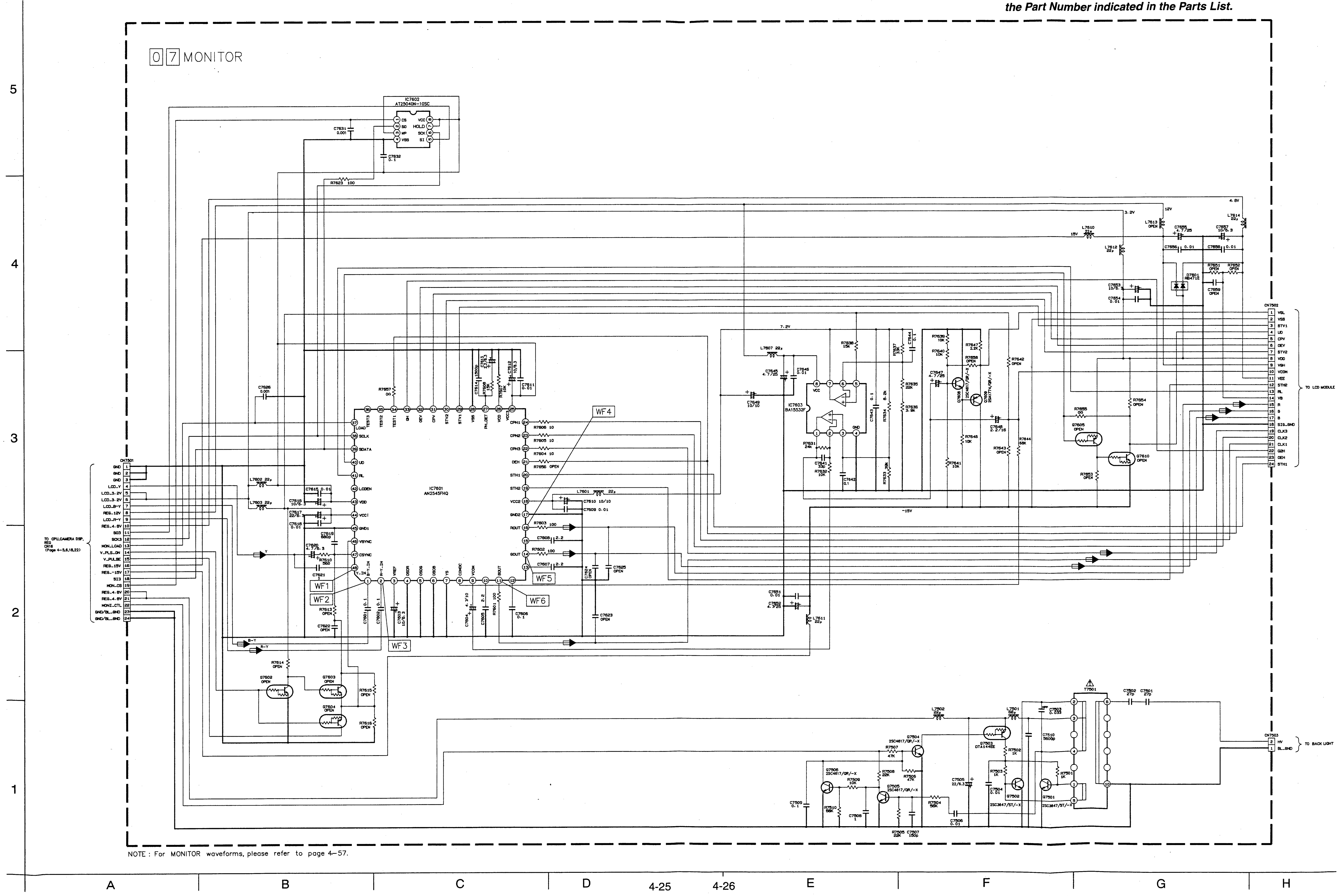
Note: IC5301 is incorporated in the CCD base assembly. When IC5301 needs replacement, replace the CCD base assembly in whole because it cannot be replaced alone.


02 CCD
TO CAMERA DSP (Page 4-17)
CN22
[14] RG
[1] H1
[2] H2
[3] V4
[4] V3
[5] V2
[6] V1
[11] CCD_15V
[12] SUB
[13] CCD_-8V
[10] CCD_OUT
[7~9] GND
CCD
C5301 0.1
C5302 1.5/25
C5306 OPEN
R5302 5.6k
C5305 27P
Q5301 2SC3931/CD/-X
CCD
WF1
IC5301
V4
V3
V2
V1
NC
GND
VO
H2
H1
RG
VL
SUB
GND
VDD
CL5301
R5303 0
R5304 OPEN
C5304 0.1
C5303 OPEN
R5301 OPEN

NOTE : For CCD waveform, please refer to page 4-57.

4.12 MONITOR SCHEMATIC DIAGRAM

NOTE: When ordering parts, be sure to order according to the Part Number indicated in the Parts List.

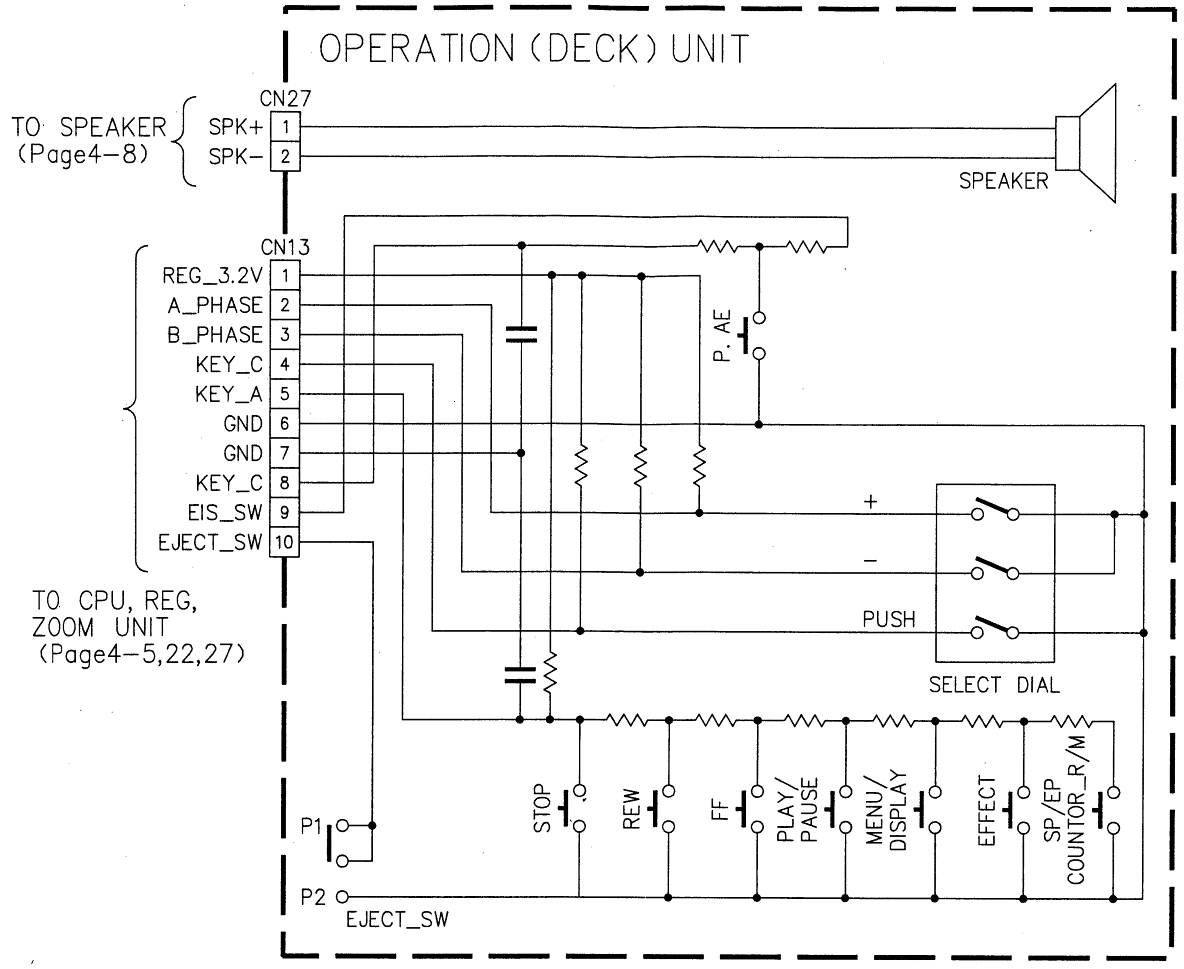


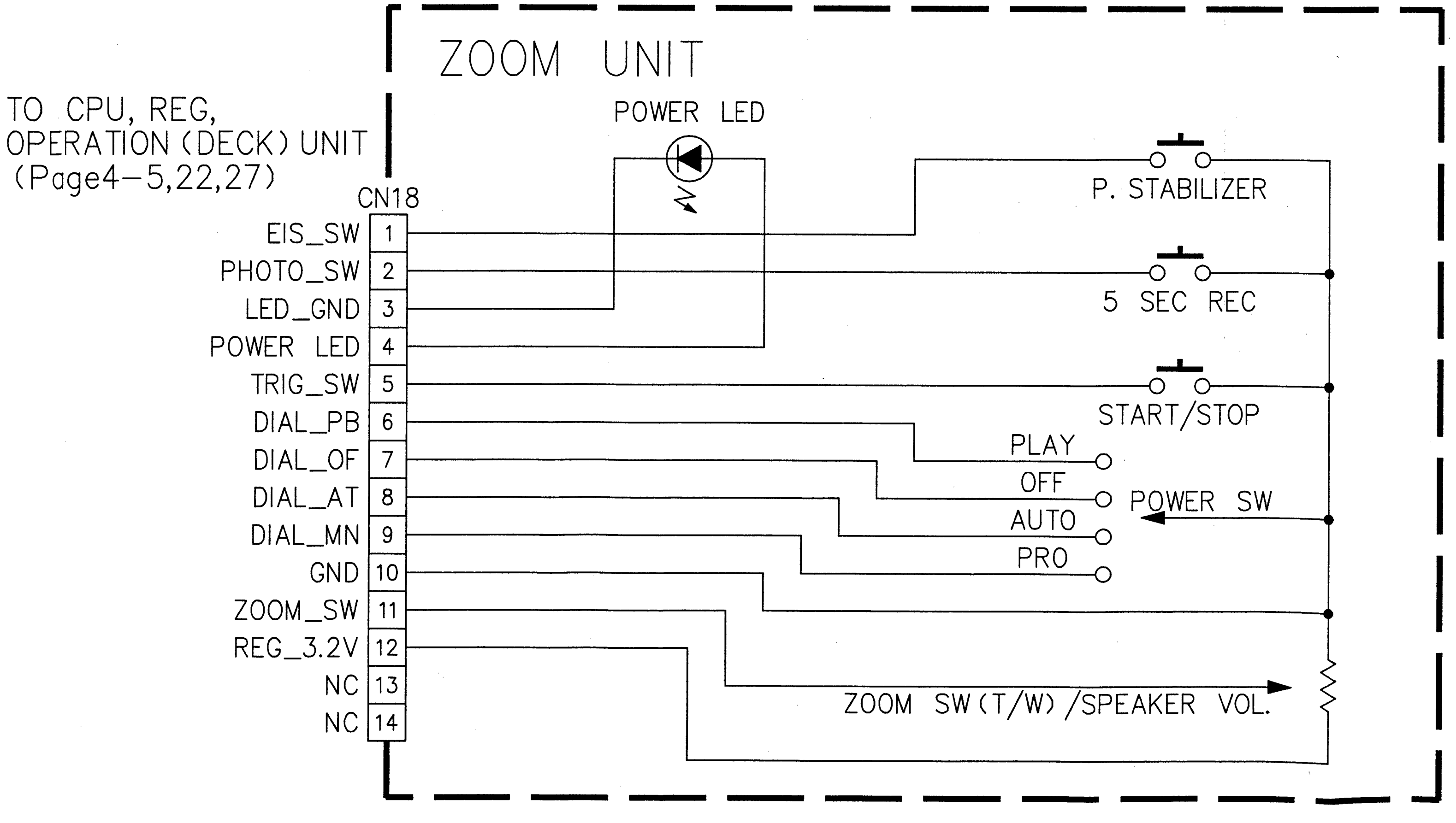
07 MONITOR
IC7602
AT25040N-10SC
CS
SO
WP
VSS
VCC
HOLD
SCK
SI
C7631 0.001
C7632 0.1
R7623 100
IC7601
AN2545FHQ
TEST3
TEST2
TEST1
GH
OEV
CPV
STV2
STV1
VSS
PH_DET
VCO
VCC3
LOAD
SCLK
SDATA
UD
RL
LCDEN
VDD
VCCI
GND1
VSYNC
CSYNC
Y_IN
B-Y_IN
R-Y_IN
VREF
OSDR
OSDG
OSDB
YS
COMDC
VCOM
BOUT
CPH1
CPH2
CPH3
OEH
STH1
STH2
VCC2
GND2
ROUT
GOUT
R7657 0Ω
C7614 1500p
C7613 22/6.3
R7608 15K
R7607 10K
C7612 10/6.3
C7611 0.01
R7606 10
R7605 10
R7604 10
R7656 OPEN
R7603 100
C7608 2.2
R7602 100
C7607 2.2
L7601 22μ
C7610 10/10
C7609 0.01
C7624 OPEN
C7625 OPEN
C7623 OPEN
C7626 0.001
L7602 22μ
L7603 22μ
C7615 0.01
C7616 10/6.3
C7617 22/6.3
C7618 0.01
C7619 680p
C7620 4.7/6.3
R7610 560
C7621 1
R7613 OPEN
C7622 OPEN
C7601 0.1
C7602 0.1
C7603 10/6.3
C7604 4.7/10
C7605 2.2
R7601 100
C7606 0.1
WF1
WF2
WF3
WF4
WF5
WF6
Y
B-Y
R-Y
R7614 OPEN
Q7602 OPEN
Q7603 OPEN
Q7604 OPEN
R7615 OPEN
R7616 OPEN
CN7501
GND 1
GND 2
GND 3
LCD_Y 4
LCD_3.2V 5
LCD_3.2V 6
LCD_B-Y 7
REG_12V 8
LCD_R-Y 9
REG_4.8V 10
SO3 11
SCK3 12
MON_LOAD 13
V_PLS_ON 14
V_PULSE 15
REG_15V 16
REG_-15V 17
SI3 18
MON_CS 19
REG_4.8V 20
REG_4.8V 21
MONI_CTL 22
GND/BL_GND 23
GND/BL_GND 24
TO CPU,CAMERA DSP, REG CN16 (Page 4-5,6,18,22)
7.2V
L7607 22μ
C7645 4.7/25
C7646 0.01
C7649 10/10
IC7603
BA15532F
VCC
GND
R7638 15k
R7637 33K
C7644 0.1
C7643 0.1
R7634 8.2k
R7635 22k
R7636 3.9k
R7633 39k
R7631 24k
C7641 33p
R7632 10K
C7642 0.1
-15V
R7639 10K
R7640 10K
R7647 2.2K
R7658 OPEN
C7647 4.7/25
Q7608 2SC4617/QR/-X
Q7609 2SA1774/QR/-X
R7642 OPEN
C7648 2.2/16
R7646 10K
R7641 10K
R7643 OPEN
R7644 68K
C7651 0.01
C7652 4.7/25
L7611 22μ
R7655 0Ω
Q7605 OPEN
R7654 OPEN
Q7610 OPEN
R7653 OPEN
3.2V
12V
4.8V
15V
L7610 22μ
L7613 OPEN
L7612 22μ
L7614 22μ
C7655 4.7/25
C7657 10/6.3
C7656 0.01
C7658 0.01
C7653 10/6.3
C7654 0.01
D7601 RB471E
R7651 OPEN
R7652 OPEN
C7659 OPEN
CN7502
1 VGL
2 VSS
3 STV1
4 UD
5 CPV
6 OEV
7 STV2
8 VDD
9 VGH
10 VCOM
11 VEE
12 STH2
13 RL
14 VB
15 R
16 G
17 B
18 SIG_GND
19 CLK3
20 CLK2
21 CLK1
22 Q2H
23 OEH
24 STH1
TO LCD MODULE
L7502 22μ
L7501 68μ
Q7504 2SC4617/QR/-X
R7507 47K
Q7506 2SC4617/QR/-X
R7508 22K
R7506 47K
R7509 10K
Q7505 2SC4617/QR/-X
C7509 0.1
R7510 56K
C7508 1
R7505 22K
C7507 150p
R7504 56K
C7506 0.01
C7505 22/6.3
Q7503 DTA144EE
R7502 1K
R7503 1K
C7504 0.01
Q7502 2SC3647/ST/-X
Q7501 2SC3647/ST/-X
R7501 1K
C7503 0.033
MPP
C7510 5600p
T7501
C7502 27p
C7501 27p
CN7503
2 HV
1 BL_GND
TO BACK LIGHT
1
2
3
4
5
A
B
C
D
E
F
G
H

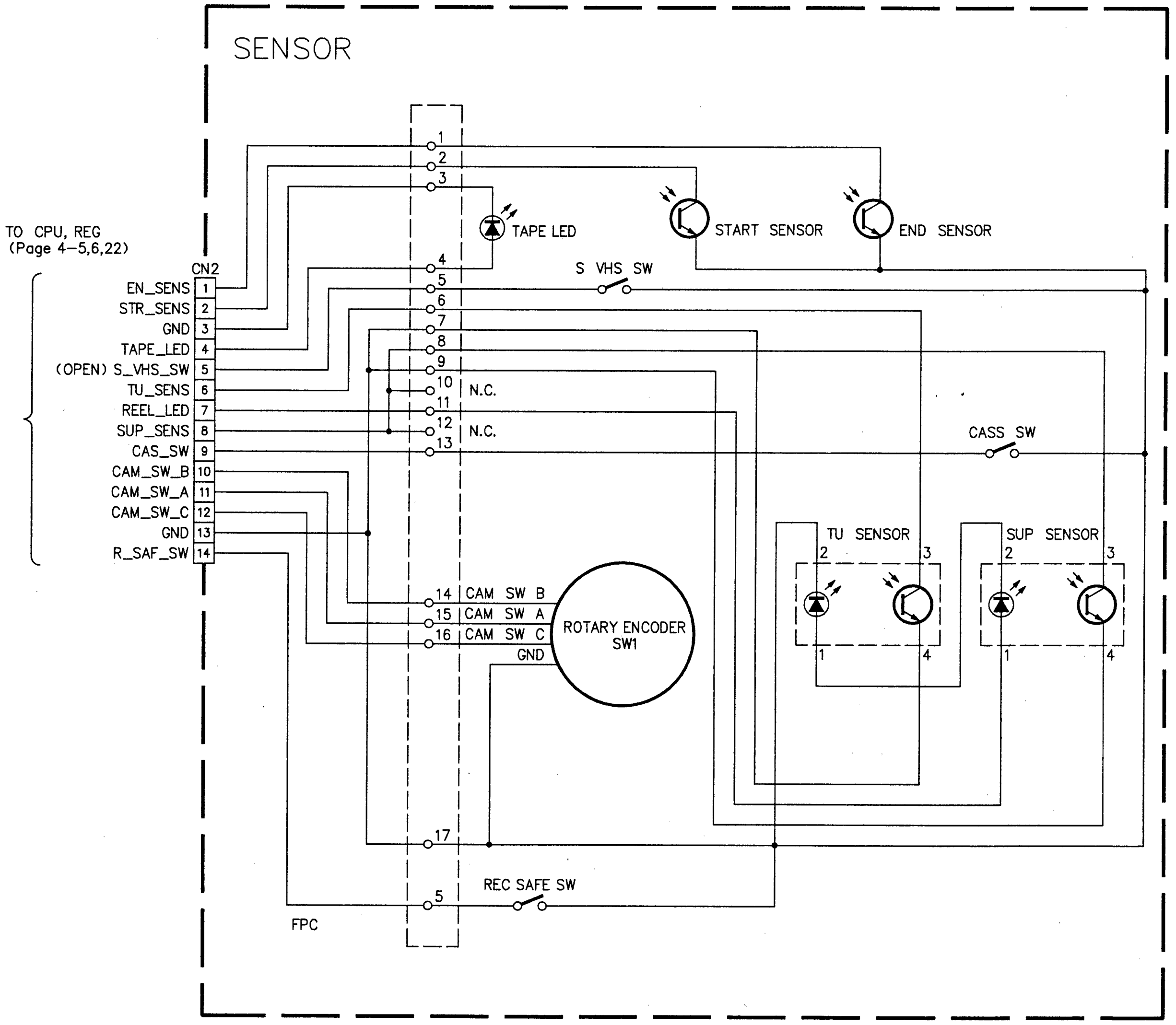
NOTE : For MONITOR waveforms, please refer to page 4–57.

4.13 OPERATION UNIT, ZOOM UNIT AND SENSOR SCHEMATIC DIAGRAMS

NOTE: The schematic diagrams are only for reference.
Avoid replacing individual parts.
Replace the entire unit only.

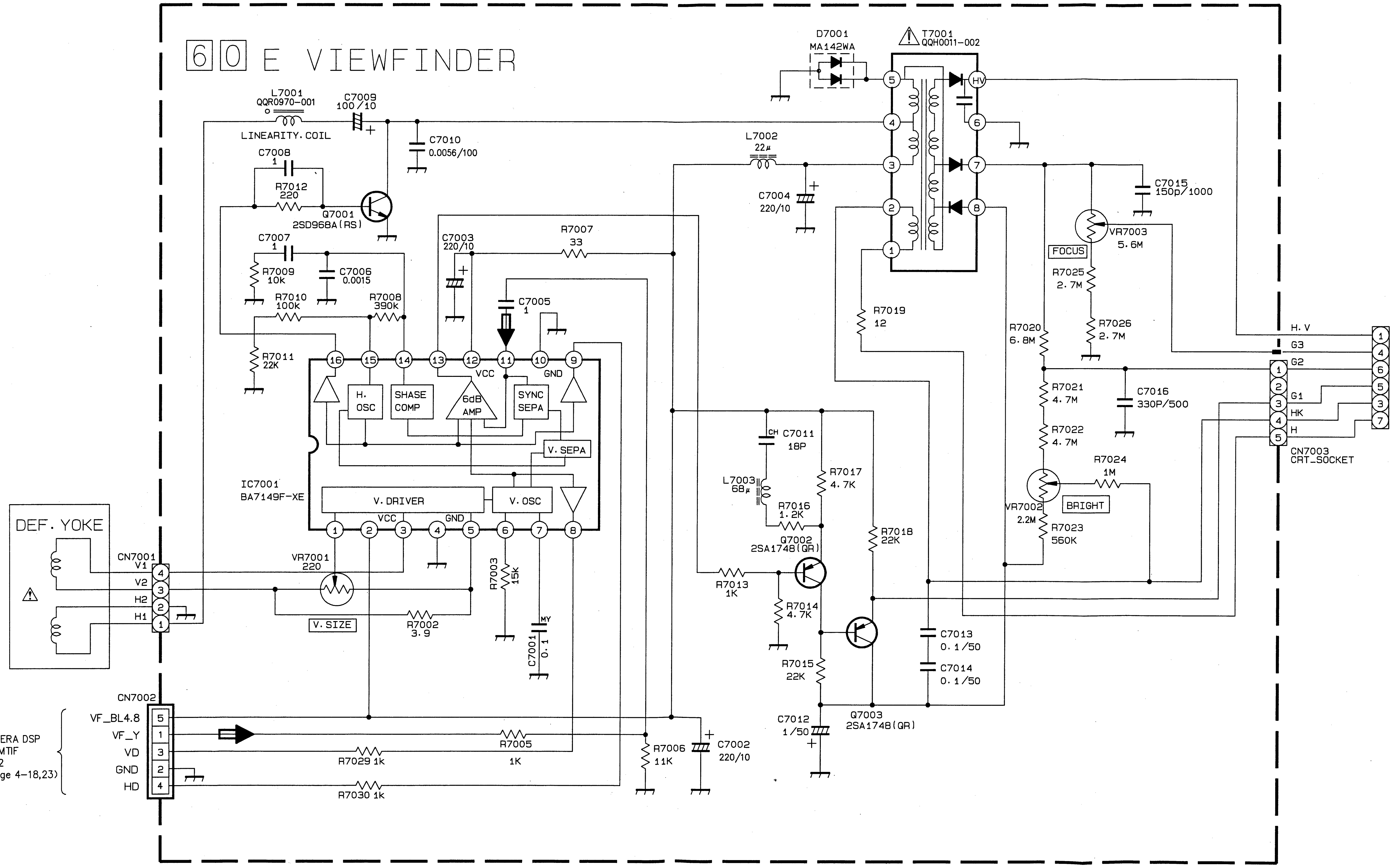

OPERATION (DECK) UNIT
TO SPEAKER (Page4-8)
CN27
SPK+ 1
SPK- 2
SPEAKER
CN13
REG_3.2V 1
A_PHASE 2
B_PHASE 3
KEY_C 4
KEY_A 5
GND 6
GND 7
KEY_C 8
EIS_SW 9
EJECT_SW 10
TO CPU, REG, ZOOM UNIT (Page4-5,22,27)
P. AE
+
-
PUSH
SELECT DIAL
STOP
REW
FF
PLAY/PAUSE
MENU/DISPLAY
EFFECT
SP/EP
COUNTOR_R/M
P1
P2
EJECT_SW


ZOOM UNIT
TO CPU, REG, OPERATION (DECK) UNIT (Page4-5,22,27)
CN18
EIS_SW 1
PHOTO_SW 2
LED_GND 3
POWER LED 4
TRIG_SW 5
DIAL_PB 6
DIAL_OF 7
DIAL_AT 8
DIAL_MN 9
GND 10
ZOOM_SW 11
REG_3.2V 12
NC 13
NC 14
POWER LED
P. STABILIZER
5 SEC REC
START/STOP
PLAY
OFF
AUTO
PRO
POWER SW
ZOOM SW (T/W) / SPEAKER VOL.


SENSOR
TO CPU, REG (Page 4-5,6,22)
CN2
EN_SENS 1
STR_SENS 2
GND 3
TAPE_LED 4
(OPEN) S_VHS_SW 5
TU_SENS 6
REEL_LED 7
SUP_SENS 8
CAS_SW 9
CAM_SW_B 10
CAM_SW_A 11
CAM_SW_C 12
GND 13
R_SAF_SW 14
1
2
3
4
5
6
7
8
9
10
11
12
13
N.C.
N.C.
TAPE LED
START SENSOR
END SENSOR
S VHS SW
CASS SW
TU SENSOR
SUP SENSOR
14 CAM SW B
15 CAM SW A
16 CAM SW C
GND
ROTARY ENCODER SW1
17
5
REC SAFE SW
FPC

4.14 ELECTRONIC VIEWFINDER SCHEMATIC DIAGRAM

***NOTE:** When ordering parts, be sure to order according to the Part Number indicated in the Parts List.*



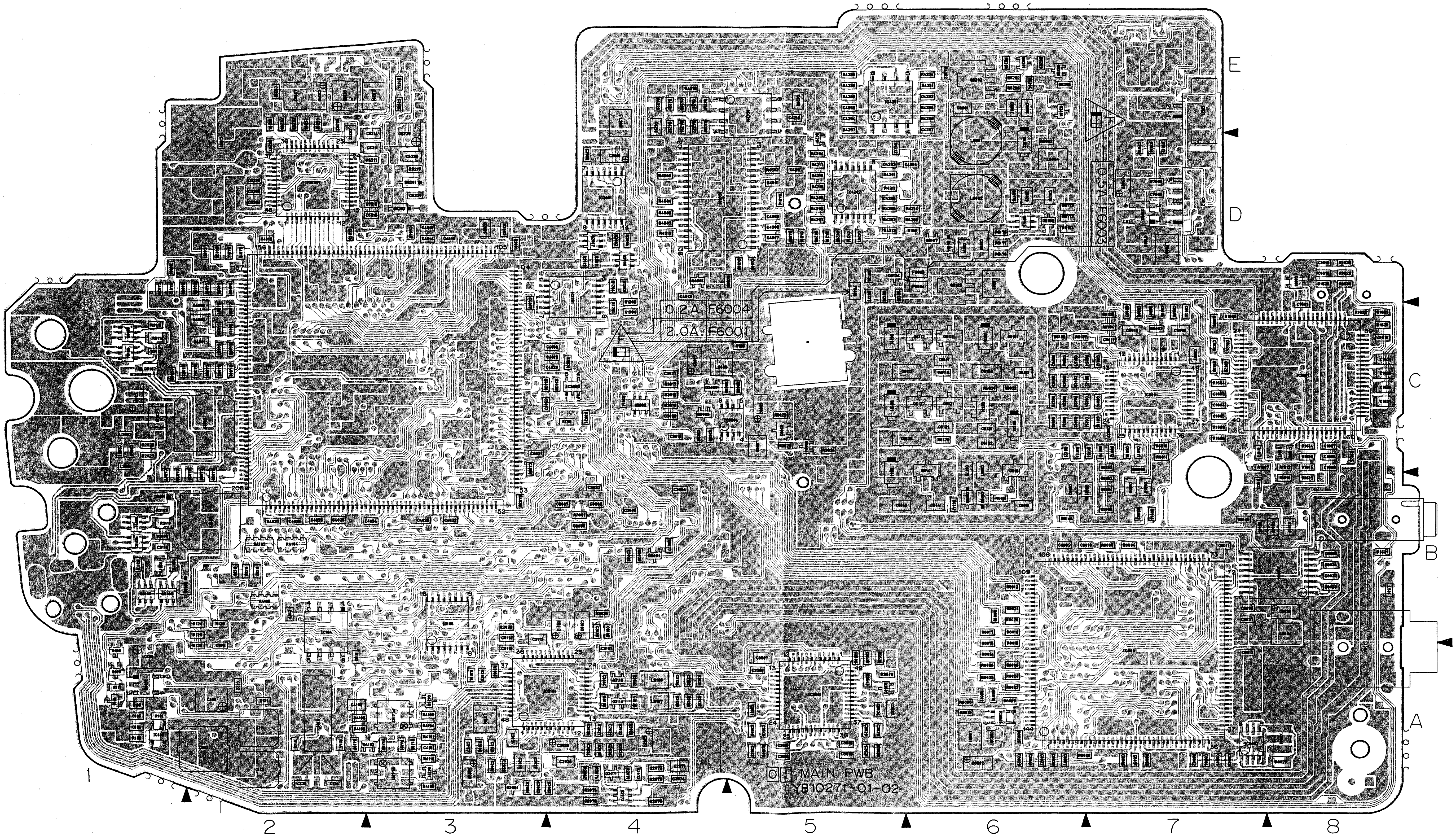
60 E VIEWFINDER
L7001
QQR0970-001
LINEARITY. COIL
C7009
100/10
C7010
0.0056/100
C7008
1
R7012
220
Q7001
2SD968A(RS)
C7007
1
R7009
10K
C7006
0.0015
R7010
100K
R7008
390K
R7011
22K
C7003
220/10
R7007
33
C7005
1
IC7001
BA7149F-XE
H. OSC
SHASE COMP
6dB AMP
SYNC SEPA
V. SEPA
V. DRIVER
V. OSC
VCC
GND
DEF. YOKE
CN7001
V1
V2
H2
H1
VR7001
220
V. SIZE
R7002
3.9
R7003
15K
C7001
0.1
MY
CN7002
VF_BL4.8
VF_Y
VD
GND
HD
TO
CAMERA DSP
VF/MTIF
CN12
(Page 4-18,23)
R7029 1K
R7030 1K
R7005
1K
R7006
11K
C7002
220/10
D7001
MA142WA
T7001
QQH0011-002
HV
L7002
22μ
C7004
220/10
R7019
12
C7011
18P
CH
L7003
68μ
R7016
1.2K
R7017
4.7K
Q7002
2SA1748(QR)
R7013
1K
R7014
4.7K
R7015
22K
C7012
1/50
R7018
22K
Q7003
2SA1748(QR)
C7013
0.1/50
C7014
0.1/50
C7015
150p/1000
VR7003
5.6M
FOCUS
R7025
2.7M
R7026
2.7M
R7020
6.8M
R7021
4.7M
C7016
330P/500
R7022
4.7M
R7024
1M
VR7002
2.2M
BRIGHT
R7023
560K
H.V
G3
G2
G1
HK
H
CN7003
CRT_SOCKET

4.15 MAIN CIRCUIT BOARD

FOIL SIDE (B)

CAUTION:
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE AND RATED FUSE.

ATTENTION:
POUR UNE PROTECTION PERMANENTE CONTRE LES RISQUE DÔINCENDE, REMPLACER LE FUSIBLE PAR UN AUTRE DE MEME TYPE ET DE MEME TENSION.


E
D
C
B
A
0.2A F6004
2.0A F6001
0.5A F6003
MAIN PWB
YB10271-01-02
1
2
3
4
5
6
7
8

COMPONENT PARTS LOCATION GUIDE (MAIN)

REF.No.	LOCATION		
CAPACITOR			
C101	A	C	1A
C102	B	C	2A
C103	B	C	2A
C104	B	C	1A
C105	B	C	1A
C106	B	C	2A
C107	B	C	2B
C108	A	C	1C
C109	A	C	3D
C110	A	C	3D
C111	B	C	2A
C112	B	C	2A
C113	A	C	2A
C114	A	C	2A
C115	B	C	1A
C116	A	C	8C
C118	A	C	2A
C119	A	C	3A
C120	A	C	3A
C121	B	C	2A
C122	B	C	2A
C123	B	C	2A
C124	B	C	2A
C125	A	C	1A
C126	A	C	1A
C127	A	C	3A
C128	A	C	2A
C129	A	C	3A
C130	B	C	1A
C131	A	C	3A
C132	A	C	3B
C133	A	C	2C
C134	A	C	2C
C135	A	C	2B
C136	A	C	2B
C137	A	C	4B
C138	A	C	1B
C140	A	C	2B
C143	A	C	2B
C144	A	C	7B
C146	A	C	4E
C147	A	C	4E
C1201	A	C	4D
C1202	A	C	4D
C1203	A	C	4D
C1204	B	C	4C
C1205	A	C	4D
C1206	A	C	4D
C1207	A	C	4D
C1601	B	C	8C
C1602	A	C	7D
C1603	B	C	7C
C1604	B	C	7C
C1605	B	C	7C
C1606	B	C	8C
C1607	B	C	8C
C1608	B	C	8C
C1609	B	C	8C
C1610	B	C	8B
C1611	A	C	7C
C1612	A	C	8C
C1613	A	C	7C
C1614	A	C	8C
C1615	A	C	7C
C1616	B	C	8C
C1617	A	C	7C
C1618	B	C	8D
C1619	B	C	8D
C1620	B	C	8D
C1621	A	C	8C
C1622	A	C	8C
C1623	A	C	7C
C1624	B	C	7C
C1625	B	C	7C
C1626	B	C	7C
C1627	B	C	8C
C1628	B	C	8C
C1629	B	C	8C
C1630	B	C	8C
C1801	B	C	2D
C2001	B	C	4D
C2002	A	C	4D
C2003	B	C	4D
C2004	A	C	4D
C2005	B	C	3D
C2009	A	C	4A
C2010	A	C	4A
C2021	B	C	4A
C2022	B	C	4A
C2023	B	C	3A
C2024	B	C	4A
C2025	B	C	4A
C2026	B	C	4A
C2027	B	C	3A
C2028	B	C	4A
C2029	B	C	3A
C2030	B	C	3A
C2031	B	C	3A
C2051	B	C	1C
C2052	B	C	1C
C2061	B	C	3A
C2062	B	C	3A
C2071	B	C	4A
C2072	B	C	4A
C2073	A	C	4A
C2074	B	C	4A
C2076	B	C	4A
C2401	A	C	6D
C2402	A	C	6E
C2403	A	C	6E
C2404	A	C	6E
C2405	A	C	7D
C3002	B	C	5C
C3003	B	C	4C
C3004	B	C	4B
C3005	B	C	4B
C3006	B	C	4B
C3007	B	C	4B
C3008	A	C	3C
C3009	A	C	4D
C3010	A	C	4C
C3011	A	C	4C
C3012	A	C	5C
C3013	A	C	4C
C3014	A	C	4C
C3015	A	C	4C
C3016	A	C	4C
C3017	A	C	4C
C3018	A	C	5C
C3019	B	C	4C
C3020	A	C	4C
C3021	A	C	4C
C3022	A	C	5C
C3023	A	C	4C
C3024	A	C	4C
C3027	B	C	4C
C3028	B	C	4C
C3031	A	C	4D
C3032	B	C	4B
C3033	B	C	4B
C3035	B	C	4B
C3037	B	C	3C
C3038	B	C	4C
C3101	B	C	1C
C3103	B	C	4B
C3104	B	C	4A
C3105	A	C	4A
C3106	A	C	4A
C3107	B	C	4A
C3108	B	C	4B
C3109	B	C	4B
C3112	B	C	4B
C3113	B	C	3B
C3114	B	C	3B
C3115	B	C	3A
C3117	B	C	3A
C3118	B	C	3A
C3119	B	C	1B
C3120	B	C	2C
C3121	B	C	2B
C3132	B	C	4A
C3134	B	C	4A
C3135	B	C	3E
C3136	B	C	4A
C3501	A	C	5A
C3502	A	C	5A
C3503	B	C	5A
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C6143	B	C	8B
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C6155	B	C	6E
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C6162	B	C	6B
C6163	B	C	7B
C6164	A	C	6C
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C6173	B	C	6C
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C6175	B	C	6D
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C7806	B	C	7D
C7807	B	C	7D
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C8008	B	C	6A
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C8012	B	C	7A
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C8040	B	C	6A
C8041	A	C	7B
C8042	A	C	7A
C8043	A	C	8A
C8044	A	C	8B
CONNECTOR			
CN1	A	C	4A
CN2	A	C	8A
CN3	A	C	4D
CN4	A	C	2A
CN5	A	C	5A
CN7	A	C	3D
CN8	A	C	4A
CN11	A	C	7D
CN12	B	C	7D
CN13	A	C	8C
CN14	A	C	2A
CN15	A	C	4D
CN16	A	C	7E
CN18	A	C	4E
CN22	A	C	3D
CN25	A	C	3C
CN26	A	C	3C
CN27	B	C	7E
DIODE			
D101	A	C	1A
D102	A	C	1B
D103	A	C	1B
D105	A	C	7A
D106	A	C	7A
D107	A	C	3C
D501	A	C	8B
D502	A	C	8B
D503	A	C	8B
D504	A	C	8B
D505	A	C	8B
D506	A	C	8B
D1601	B	C	8D
D3001	B	C	4B
D3002	B	C	4C
D3101	B	C	1B
D3102	B	C	1C
D3103	B	C	1B
D4001	A	C	2C
D4002	A	C	2C
D5201	B	C	3D
D5202	B	C	3D
D6111	B	C	5C
D6121	B	C	5C
D6131	B	C	6C
D6141	B	C	5C
D6151	B	C	6C
D6152	B	C	6D
D6161	B	C	7B
D6162	B	C	6B
D6163	B	C	6B
D6164	B	C	6D
D6165	A	C	7C
IC			
IC101	A	C	2B
IC102	A	C	2A
IC103	B	C	1A
IC104	B	C	2B
IC105	B	C	3B
IC106	B	C	1A
IC107	A	C	1A
IC1201	B	C	4D
IC1601	B	C	8C
IC1801	A	D	2D
IC2001	B	C	4D
IC2401	A	C	6E
IC3001	A	C	4C
IC3002	A	C	4B
IC3003	B	C	4C
IC3004	B	C	5C
IC3101	B	C	4A
IC3501	B	C	5A
IC3901	A	C	5A
IC4001	B	C	3C
IC4002	A	C	2C
IC4003	A	C	2C
IC4004	A	C	2C
IC4005	A	C	2C
IC4201	B	C	5E
IC4202	B	C	5D
IC4251	B	C	5E
IC4501	B	C	4D
IC5201	B	C	2D
IC5202	A	C	2D
IC6001	B	C	7C
IC7801	A	C	7D
IC7802	A	C	7D
IC7803	B	C	7D
IC8001	B	C	7A
IC8002	A	C	7B
IC8003	A	C	6A
IC8004	A	C	7B
IC8005	B	C	6A
IC8006	B	C	8B
IC8007	B	C	7A
COIL			
L101	A	C	2A
L102	A	C	3D
L103	A	C	3D
L501	B	C	8B
L2001	B	C	4E
L2002	A	C	4A
L2003	A	C	4D
L2051	B	C	1C
L2052	B	C	1C
L2401	A	C	6E
L3002	B	C	5C
L3003	B	C	4C
L3101	B	C	1C
L3104	B	C	3A
L3106	B	C	4A
L3107	B	C	4A
L3501	A	C	5A
L3502	A	C	5A
L3901	A	C	6A
L4001	A	C	2C
L4002	A	C	2C
L4003	A	C	1C
L4004	A	C	2D
L4005	A	C	1C
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L6141	A	C	6B
L6151	A	C	6C
L6161	A	C	6B
L6202	B	C	6D
L7801	A	C	7D
L7803	B	C	7D
L8001	B	C	6A
L8002	A	C	6A
L8003	A	C	6A
L8004	B	C	8B
TRANSISTOR			
Q101	A	C	1B
Q102	A	C	1B
Q103	A	C	3D
Q104	A	C	8A
Q105	A	C	8A
Q106	A	C	8A
Q107	A	C	8A
Q108	B	C	1A
Q109	B	C	1A
Q110	B	C	1A
Q111	A	C	3B
Q2001	A	C	4D
Q2007	B	C	4D
Q2008	B	C	4D
Q2061	B	C	3A
Q2071	B	C	4A
Q2072	B	C	4A
Q2401	B	C	6E
Q3002	B	C	4C
Q3003	B	C	5C
Q3004	B	C	5C
Q3005	B	C	4C
Q3101	B	C	1B
Q3102	B	C	1B
Q3103	B	C	1C

REF.No.	LOCATION		
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Q3105	B	C	1B
Q3106	B	C	1B
Q3113	B	C	4A
Q3114	B	C	4A
Q3501	A	C	5A
Q3502	A	C	5A
Q3506	A	C	5A
Q3509	B	C	5A
Q3901	A	C	6A
Q3902	A	C	6A
Q3903	A	C	6A
Q3904	A	C	5A
Q4001	A	C	2D
Q4002	A	C	2D
Q4004	A	C	1C
Q4101	B	C	3A
Q4102	B	C	3A
Q4103	B	C	3A
Q4201	B	C	5D
Q4251	A	D	2D
Q4501	B	C	4D
Q4502	A	C	5E
Q4503	A	C	5E
Q6111	B	C	6C
Q6112	B	C	6C
Q6121	B	C	6C
Q6122	B	C	6C
Q6123	B	C	6D
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Q6162	A	C	6C
Q6163	A	C	7C
Q6164	A	C	7C
Q6165	B	C	6D
Q6166	B	C	6D
Q6167	B	C	6D
Q6168	A	C	7D
Q6201	B	C	6E
Q6202	B	C	6E
Q6203	B	C	6E
RESISTOR			
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R102	B	C	1A
R103	A	C	1A
R104	A	C	1A
R105	A	C	1B
R106	A	C	1B
R107	A	C	1B
R108	A	C	1B
R109	A	C	1B
R110	A	C	3D
R111	A	C	3D
R112	A	C	3D
R113	A	C	8A
R114	A	C	8A
R115	A	C	8A
R116	A	C	8A
R117	B	C	1A
R118	A	C	7A
R119	A	C	7A
R120	A	C	7A
R121	A	C	7A
R122	A	C	2A
R123	B	C	2A
R124	B	C	2B
R125	A	C	1B
R126	A	C	1B
R127	A	C	2B
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R129	B	C	2B
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R131	A	C	6B
R132	B	C	2B
R133	B	C	2B
R134	A	C	4E
R135	B	C	2B
R136	A	C	4E
R137	A	C	2B
R138	A	C	1B
R139	B	C	4C
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R141	A	C	2B
R142	A	C	2A
R143	B	C	2A
R144	B	C	2A
R145	A	C	3C
R146	A	C	1A
R147	A	C	3A
R148	A	C	2C
R150	A	C	4E
R152	A	C	2A
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R160	A	C	3A
R161	A	C	3A
R162	B	C	2A
R163	A	C	3B
R164	A	C	7E
R165	B	C	5C
R166	B	C	6D
R167	A	C	1B
R168	A	C	1B
R169	A	C	1B
R170	A	C	1B
R171	A	C	1B
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R504	A	C	8B
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R1633	B	C	8C
R2001	B	C	3D
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R2003	B	C	3D
R2004	B	C	4D
R2005	A	C	4D
R2011	B	C	4D
R2012	B	C	4D
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R2402	A	C	6E
R2403	A	C	6E
R2404	A	C	6E
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R3539	A	C	5A
R3540	B	C	5A
R3901	A	C	5A
R3902	A	C	6A
R4001	B	C	2C
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R4003	B	C	2C
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R4006	B	C	2C
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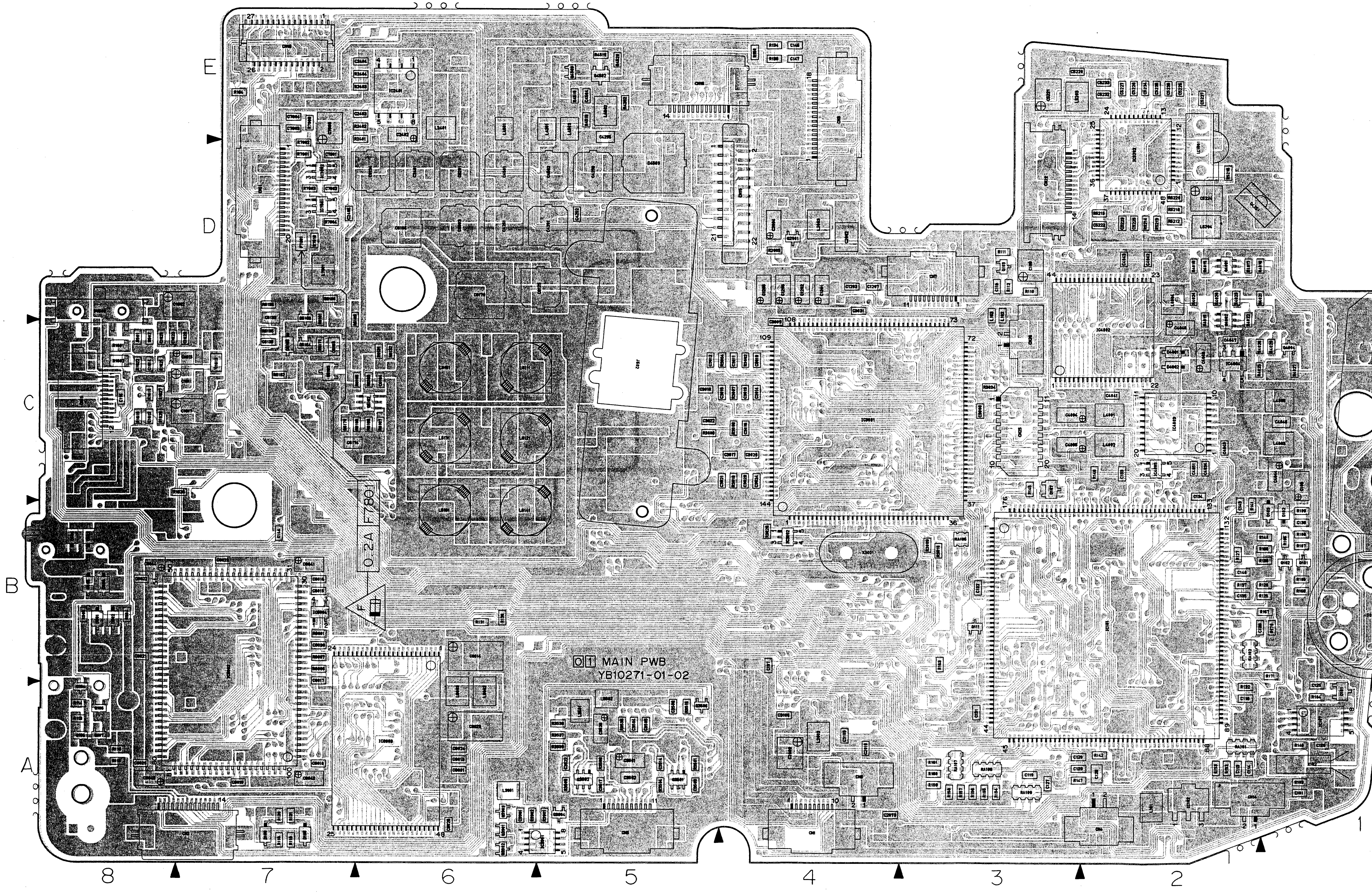
R4024	A	C	2D
R4025	A	C	2C
R4026	A	C	2C
R4027	A	C	1C
R4029	A	C	1C
R4035	B	C	2B
R4036	B	C	2B
R4037	B	C	2B
R4038	B	C	3B
R4101	B	C	3A
R4102	B	C	3A
R4103	B	C	3A
R4104	B	C	3A
R4105	B	C	3A
R4106	B	C	2A
R4107	B	C	2A
R4108	B	C	2A
R4109	B	C	3A
R4110	B	C	3A
R4111	B	C	3A
R4201	B	C	5D
R4202	B	C	5D
R4203	B	C	6D
R4204	B	C	5D
R4205	B	C	5D
R4206	B	C	5D
R4207	B	C	5D
R4208	B	C	5D
R4209	B	C	5D
R4210	B	C	5D
R4211	B	C	5D
R4212	B	C	5D
R4213	B	C	5D
R4214	B	C	6D
R4215	B	C	5D
R4216	B	C	5D
R4217	B	C	5D
R4218	B	C	4E
R4219	B	C	4E
R4220	B	C	4E
R4221	B	C	4E
R4222	B	C	4E
R4223	B	C	4E
R4224	B	C	4E
R4251	B	C	6E
R4252	B	C	6E
R4253	B	C	5E
R4254	B	C	6E
R4255	B	C	5E
R4256	B	C	5E
R4257	B	C	5E
R4258	B	C	6E
R4259	B	C	6E
R4262	A	C	5E
R4501	B	C	5D
R4502	B	C	5D
R4503	B	C	4D
R4504	B	C	4D
R4505	B	C	5D
R4506	B	C	4D
R4507	B	C	4D
R4513	B	C	4D
R4514	B	C	5D
R4515	B	C	5D
R4516	A	C	5E
R4518	A	C	5E
R4519	A	C	5E
R4520	A	C	5E
R5201	B	C	2E
R5202	B	C	2E
R5211	B	C	3D
R5212	A	C	2D
R5213	A	C	2D
R5214	A	C	2D
R5215	A	C	2D
R5216	A	C	2D
R5217	B	C	3D
R5218	A	C	2D
R5220	A	C	2D
R6001	B	C	7C
R6002	B	C	7C
R6009	B	C	7C
R6010	B	C	7C
R6011	B	C	7C
R6012	B	C	7C
R6111	B	C	6C
R6112	B	C	6C
R6113	B	C	6C
R6114	B	C	6C
R6115	B	C	6C
R6121	B	C	6C
R6122	B	C	6C
R6123	B	C	6C
R6124	B	C	6C
R6125	B	C	5D
R6126	B	C	5D
R6127	B	C	5D
R6128	B	C	5D
R6129	B	C	6C
R6131	A	C	6C
R6132	A	C	6C
R6133	B	C	7C
R6134	B	C	7C
R6135	A	C	7C
R6136	A	C	7D
R6137	B	C	6C
R6138	B	C	6C
R6141	B	C	6B
R6142	B	C	7C
R6143	B	C	6C
R6144	B	C	6B
R6145	B	C	7B
R6146	B	C	7B
R6151	B	C	7C
R6152	B	C	6C
R6153	B	C	6C
R6154	B	C	7C
R6161	B	C	6B
R6162	B	C	7B
R6163	B	C	7C
R6164	B	C	7B
R6165	A	C	6C
R6166	A	C	6C
R6167	A	C	6C
R6168	A	C	6C
R6169	A	C	6C
R6170	A	C	7C
R6171	A	C	7C
R6172	B	C	6D
R6173	B	C	6D
R6174	B	C	6D
R6175	B	C	6D
R6176	B	C	6D
R6177	B	C	6D
R6178	B	C	6D
R6179	B	C	7C
R6180	A	C	7D
R6181	A	C	7D
R6182	A	C	7C
R6183	A	C	7D
R6201	B	C	6E
R6202	B	C	6E
R6203	B	C	6E
R6204	B	C	6E
R6205	B	C	6E
R6206	B	C	6E
R6902	B	C	6D
R6903	B	C	7B
R6907	B	C	7C
R6914	B	C	7B
R6931	B	C	6C
R6932	B	C	6C
R7801	A	C	7D
R7802	A	C	7D
R7803	A	C	7D
R7804	A	C	7D
R7808	B	C	7D
R7809	A	C	7E
R7810	A	C	7D
R8001	A	C	7B
R8002	B	C	7A
R8003	B	C	7A
R8004	B	C	7B
R8005	B	C	7B
R8006	A	C	7B
R8007	A	C	7B
R8008	B	C	6A
R8009	B	C	6A
R8010	B	C	6A
R8011	B	C	6A
R8012	B	C	6B
R8013	B	C	6A
R8014	B	C	6A
R8015	B	C	6B
R8016	B	C	6B
R8017	B	C	6B
R8018	B	C	6B
R8019	B	C	6B
R8020	B	C	6B
R8021	B	C	6B
R8022	B	C	6A
R8023	B	C	6A
R8024	B	C	6A
R8025	B	C	6A
R8026	B	C	6A
R8027	B	C	8A
R8028	B	C	6A
RA101	A	C	2A
RA102	A	C	2B
RA103	B	C	2B
RA104	B	C	2B
RA105	B	C	2B
RA106	A	C	3B
RA107	A	C	3A
RA108	A	C	3A
RA109	A	C	3A
OTHER			
F6001	B	C	5D
F6003	B	C	6D
F6004	B	C	6D
F7801	A	C	7D
FL4101	B	C	3A
FL4102	B	C	3A
J501	A	D	8B
J502	A	D	5C
J503	A	D	8A
J504	A	D	1C
J505	A	D	1B
SW503	A	C	8D
TP101	A	C	2C
TP102	B	C	2B
TP103	A	C	2A
X101	B	C	2A
X102	A	C	1A
X3001	A	D	4B
X8001	B	C	8A

COMPONENT SIDE (A)

CAUTION:
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE AND RATED FUSE.

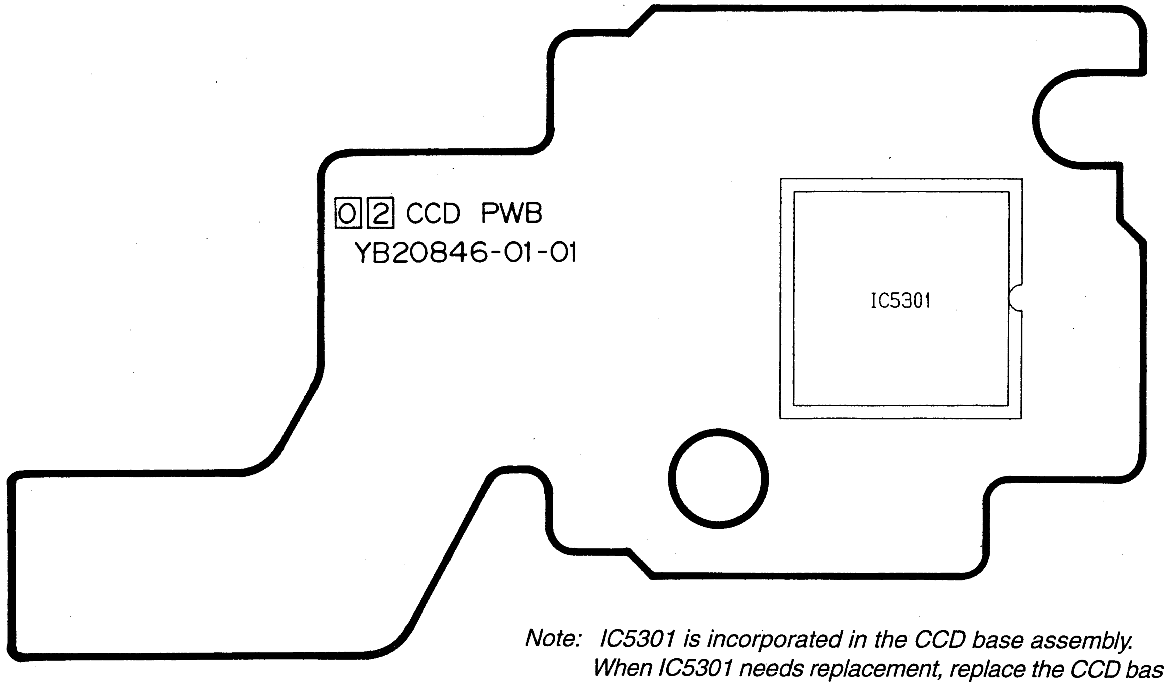
ATTENTION:
POUR UNE PROTECTION PERMANENTE CONTRE LES RISQUE DÔINCENDE, REMPLACER LE FUSIBLE PAR UN AUTRE DE MEME TYPE ET DE MEME TENSION.



E
D
C
B
A
F780
0.2A
01 MAIN PWB
YB10271-01-02
8
7
6
5
4
3
2
1

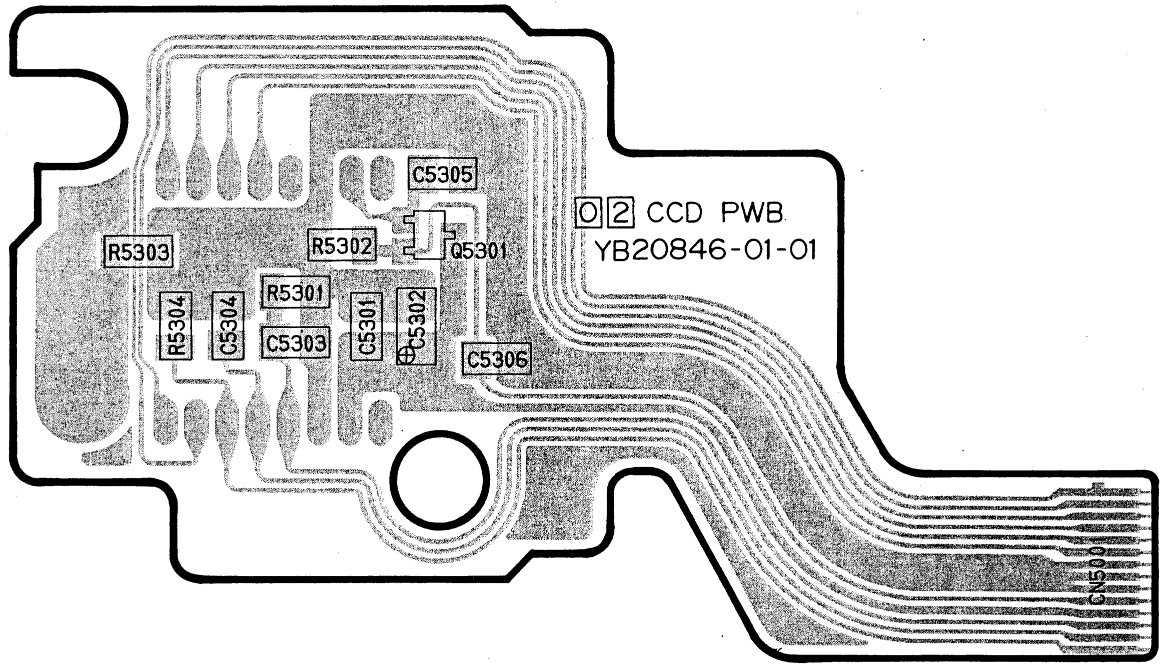
4.16 CCD CIRCUT BOARD

FOIL SIDE (B)


02 CCD PWB
YB20846-01-01
IC5301

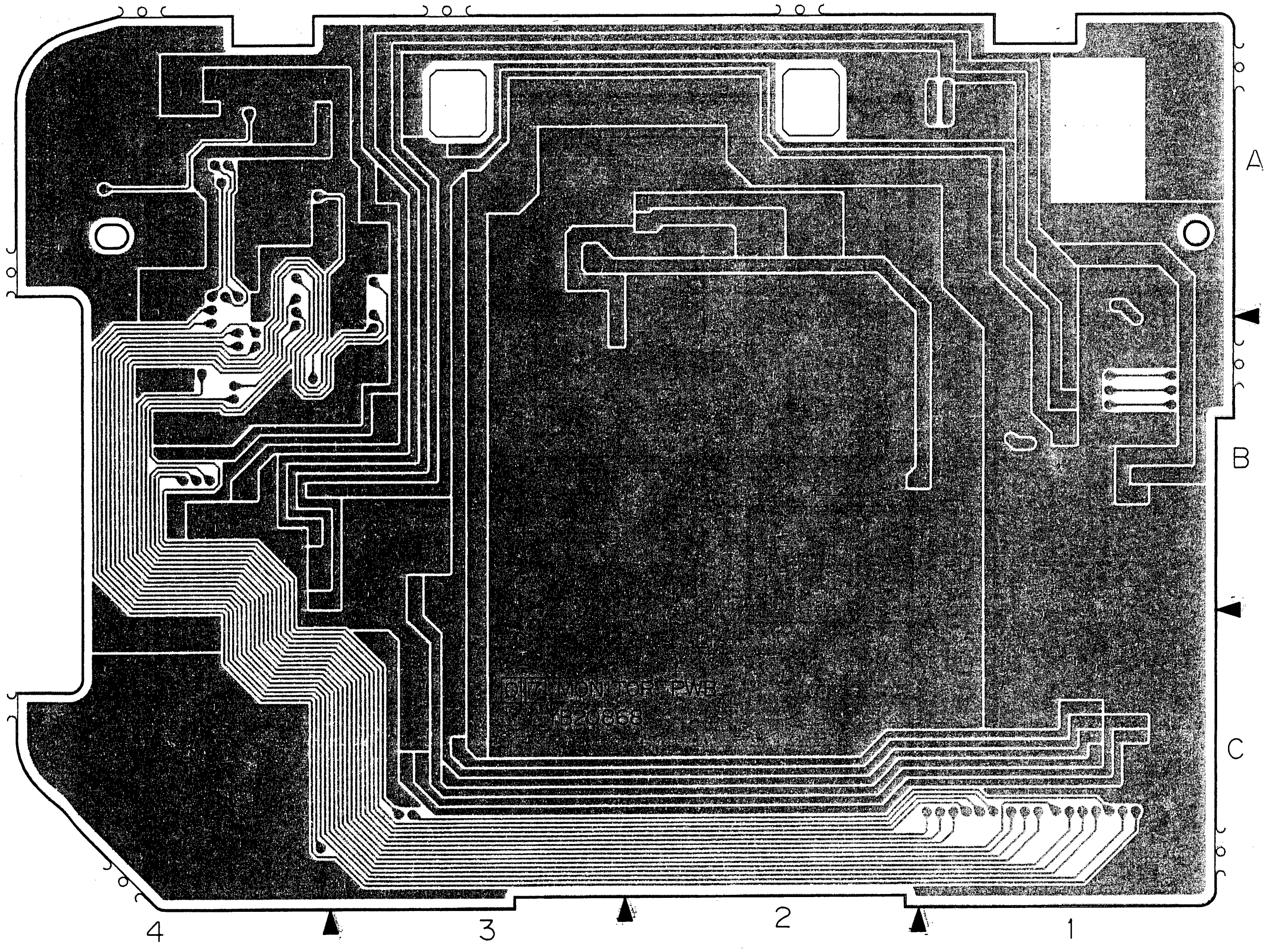
Note: IC5301 is incorporated in the CCD base assembly. When IC5301 needs replacement, replace the CCD base assembly in whole because it cannot be replaced alone.

COMPONENT SIDE (A)

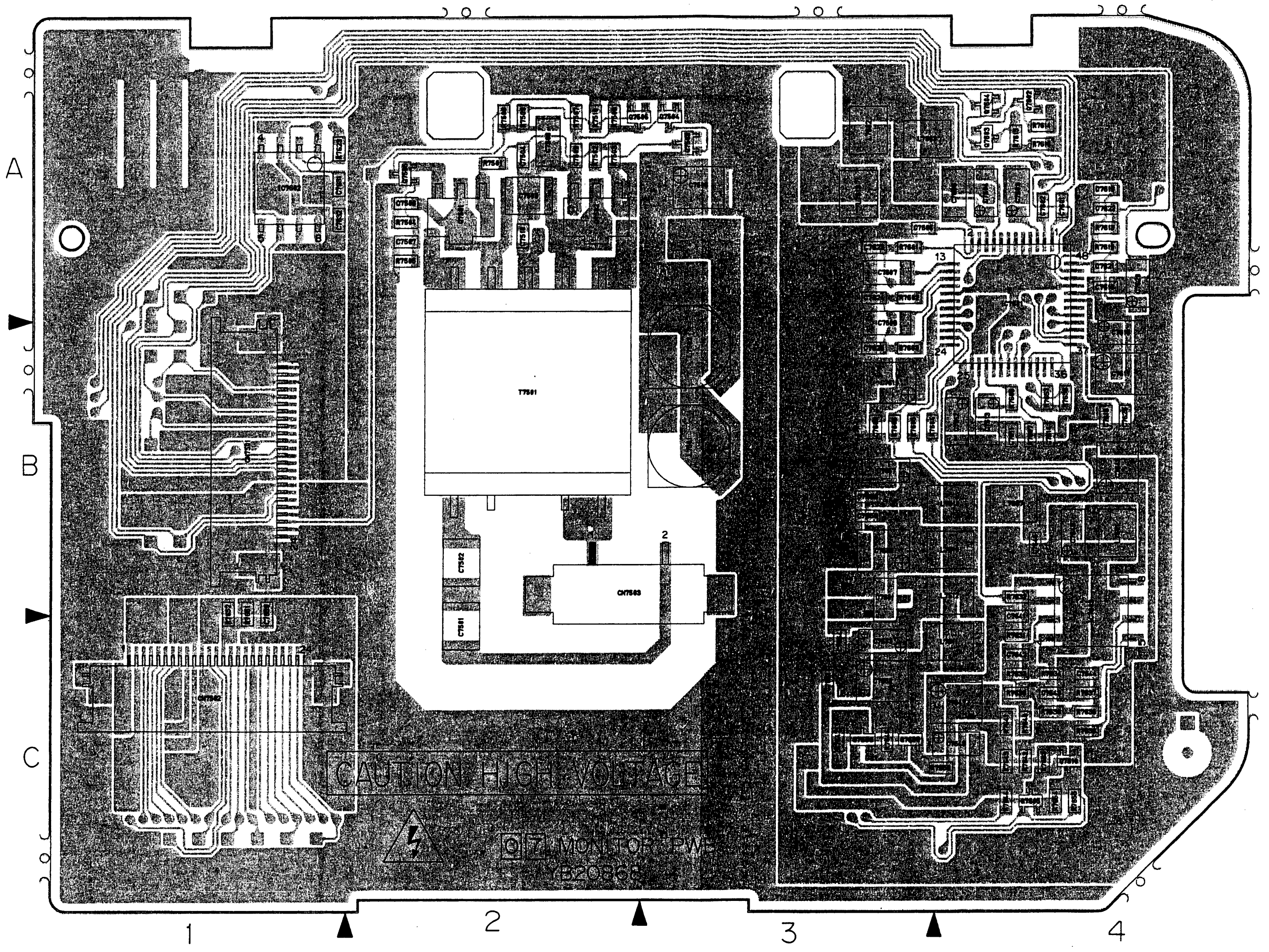

02 CCD PWB
YB20846-01-01
C5305
R5303
R5302
Q5301
R5301
R5304
C5304
C5303
C5301
C5302
C5306
CN5001

4.17 MONITOR CIRCUT BOARD

FOIL SIDE (B)



COMPONENT SIDE (A)

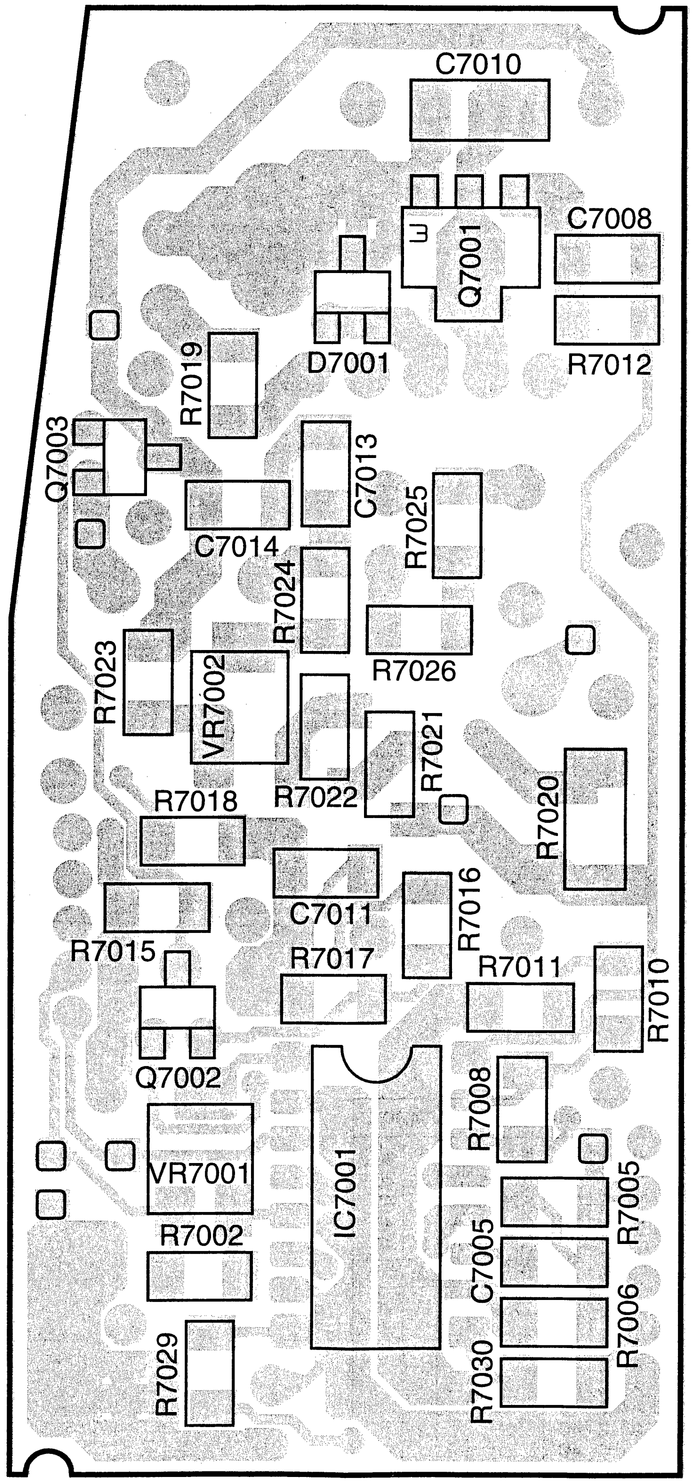


COMPONENT PARTS LOCATION GUIDE (MONITOR)

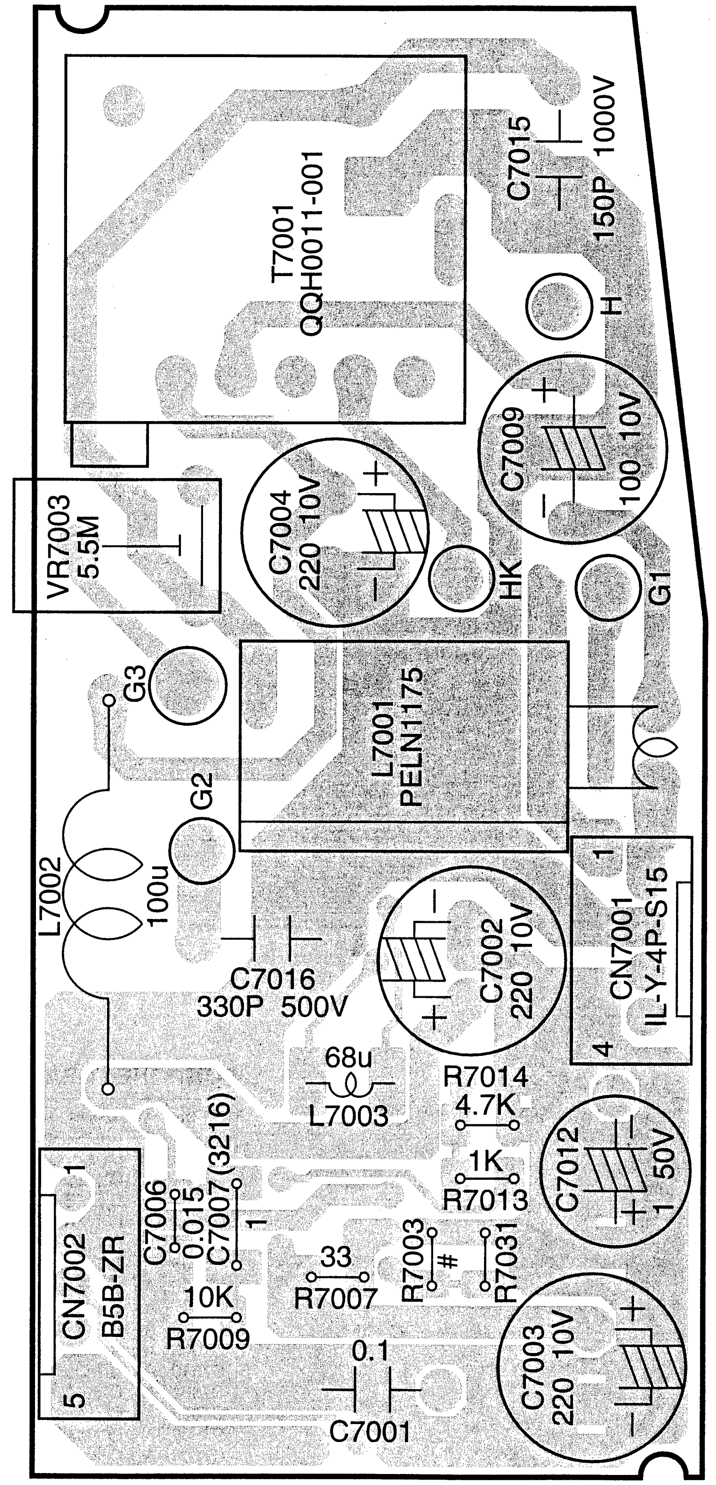
REF.No.	LOCATION		
CAPACITOR			
C7501	A	C	2C
C7502	A	C	2B
C7503	A	C	2A
C7504	A	C	2A
C7505	A	C	3A
C7506	A	C	2A
C7507	A	C	2A
C7508	A	C	2A
C7509	A	C	2A
C7510	A	C	2A
C7601	A	C	4A
C7602	A	C	4A
C7603	A	C	4A
C7604	A	C	4A
C7605	A	C	4A
C7606	A	C	4A
C7607	A	C	3A
C7608	A	C	3B
C7609	A	C	3B
C7610	A	C	3B
C7611	A	C	4B
C7612	A	C	4B
C7613	A	C	4B
C7614	A	C	4B
C7615	A	C	4B
C7616	A	C	4B
C7617	A	C	4B
C7618	A	C	4A
C7619	A	C	4A
C7620	A	C	4A
C7621	A	C	4A
C7622	A	C	4A
C7623	A	C	3A
C7624	A	C	3A
C7625	A	C	3B
C7626	A	C	4B
C7631	A	C	2A
C7632	A	C	2A
C7641	A	C	4C
C7642	A	C	4C
C7643	A	C	4C
C7644	A	C	4C
C7645	A	C	4B
C7646	A	C	4B
C7647	A	C	4C
C7648	A	C	4C
C7649	A	C	4B
C7651	A	C	3C
C7652	A	C	3C
C7653	A	C	3C
C7654	A	C	3C
C7655	A	C	3B
C7656	A	C	3B
C7657	A	C	3B
C7658	A	C	3B
C7659	A	C	1C
CONNECTOR			
CN7501	A	C	1B
CN7502	A	C	1C
CN7503	A	C	2B
DIODE			
D7601	A	C	3B
IC			
IC7601	A	C	4A
IC7602	A	C	1A
IC7603	A	C	4C
COIL			
L7501	A	C	3B
L7502	A	C	3B
L7601	A	C	4B
L7602	A	C	3A
L7603	A	C	4A
L7607	A	C	4B
L7610	A	C	4B
L7611	A	C	4C
L7612	A	C	4B
L7613	A	C	3A
L7614	A	C	4B
TRANSISTOR			
Q7501	A	C	2A
Q7502	A	C	2A
Q7503	A	C	3A
Q7504	A	C	3A
Q7505	A	C	2A
Q7506	A	C	3A
Q7602	A	C	4A
Q7603	A	C	4A
Q7604	A	C	4A
Q7605	A	C	4C
Q7608	A	C	3C
Q7609	A	C	3C
Q7610	A	C	4C
RESISTOR			
R7501	A	C	2A
R7502	A	C	2A
R7503	A	C	2A
R7504	A	C	2A
R7505	A	C	2A
R7506	A	C	2A
R7507	A	C	2A
R7508	A	C	2A
R7509	A	C	2A
R7510	A	C	2A
R7601	A	C	3A
R7602	A	C	3A
R7603	A	C	3B
R7604	A	C	4B
R7605	A	C	3B
R7606	A	C	3B
R7607	A	C	4B
R7608	A	C	4B
R7610	A	C	4A
R7613	A	C	4A
R7614	A	C	4A
R7615	A	C	4A
R7616	A	C	4A
R7623	A	C	2A
R7631	A	C	4C
R7632	A	C	4B
R7633	A	C	4C
R7634	A	C	4C
R7635	A	C	4C
R7636	A	C	4C
R7637	A	C	4C
R7638	A	C	4C
R7639	A	C	4C
R7640	A	C	4C
R7641	A	C	4C
R7642	A	C	4C
R7643	A	C	4C
R7644	A	C	4C
R7646	A	C	3C
R7647	A	C	3C
R7651	A	C	1C
R7652	A	C	1C
R7653	A	C	4C
R7654	A	C	4C
R7655	A	C	4C
R7656	A	C	4B
R7657	A	C	4B
R7658	A	C	4C
OTHER			
T7501	A	C	2B

4.18 ELECTRONIC VIEWFINDER CIRCUIT BOARD

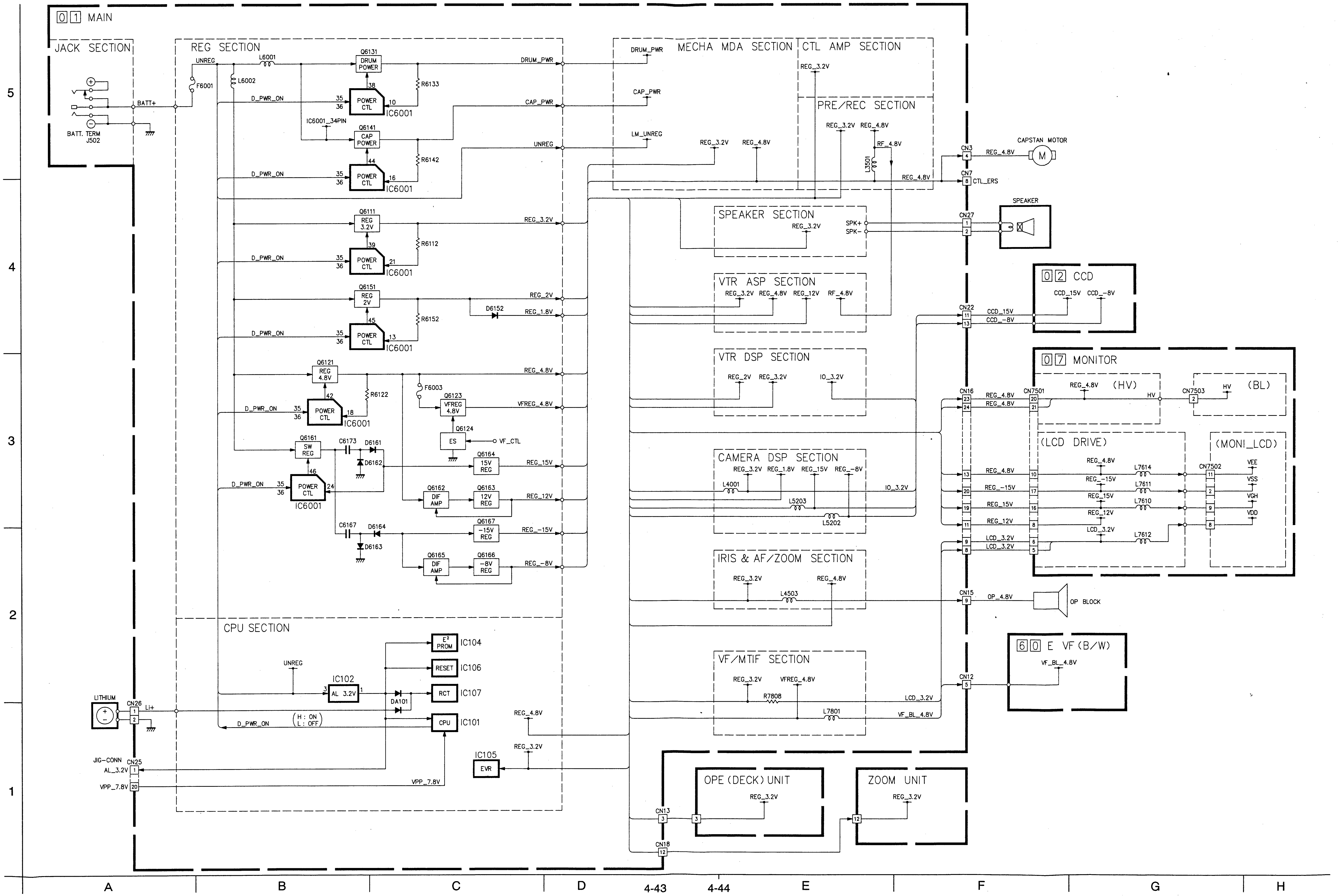
FOIL SIDE (B)


C7010
E
Q7001
C7008
D7001
R7012
R7019
Q7003
C7013
C7014
R7025
R7024
R7026
R7023
VR7002
R7021
R7018
R7022
R7020
C7011
R7016
R7015
R7017
R7011
R7010
Q7002
R7008
IC7001
VR7001
R7005
R7002
C7005
R7006
R7029
R7030

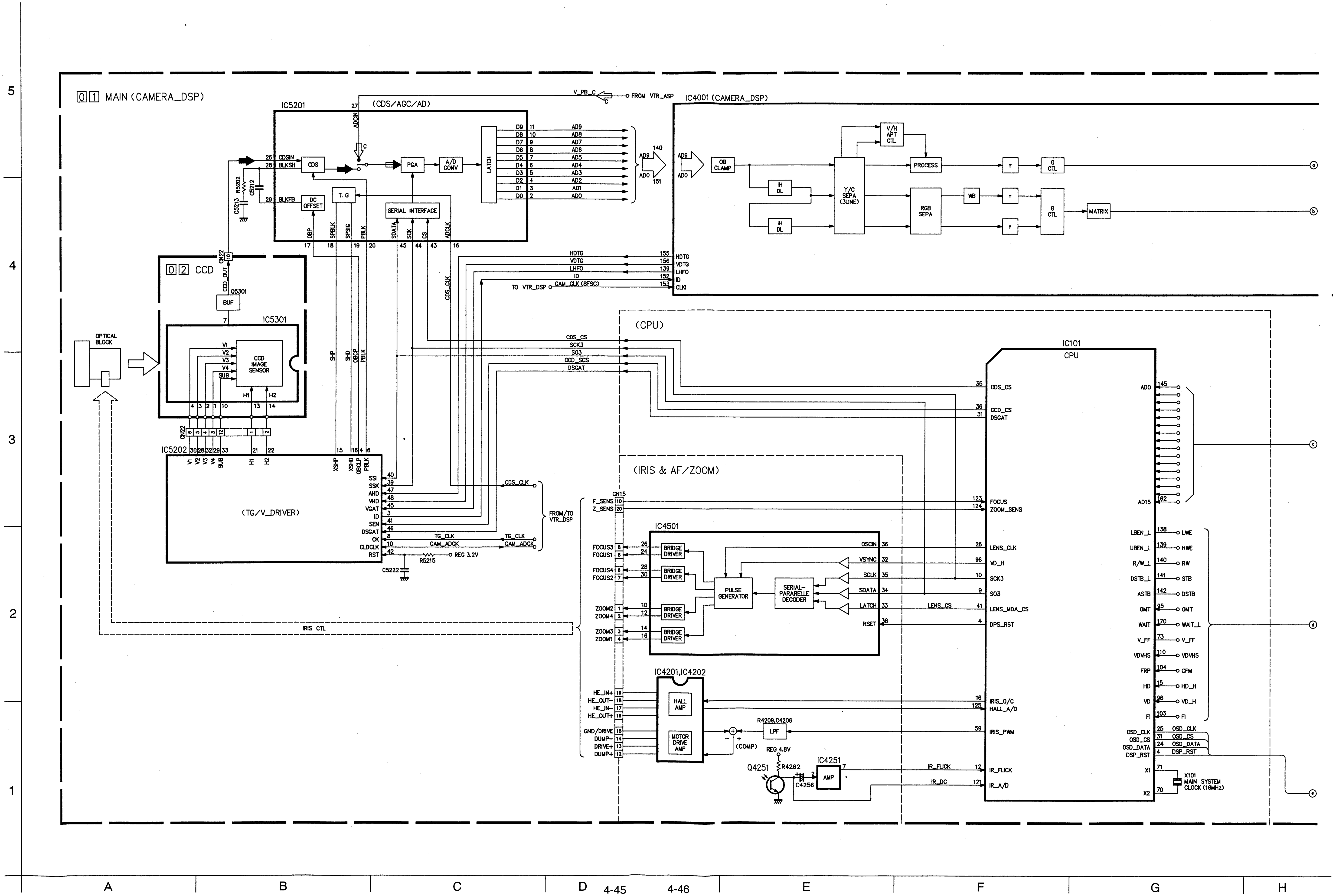
COMPONENT SIDE (A)

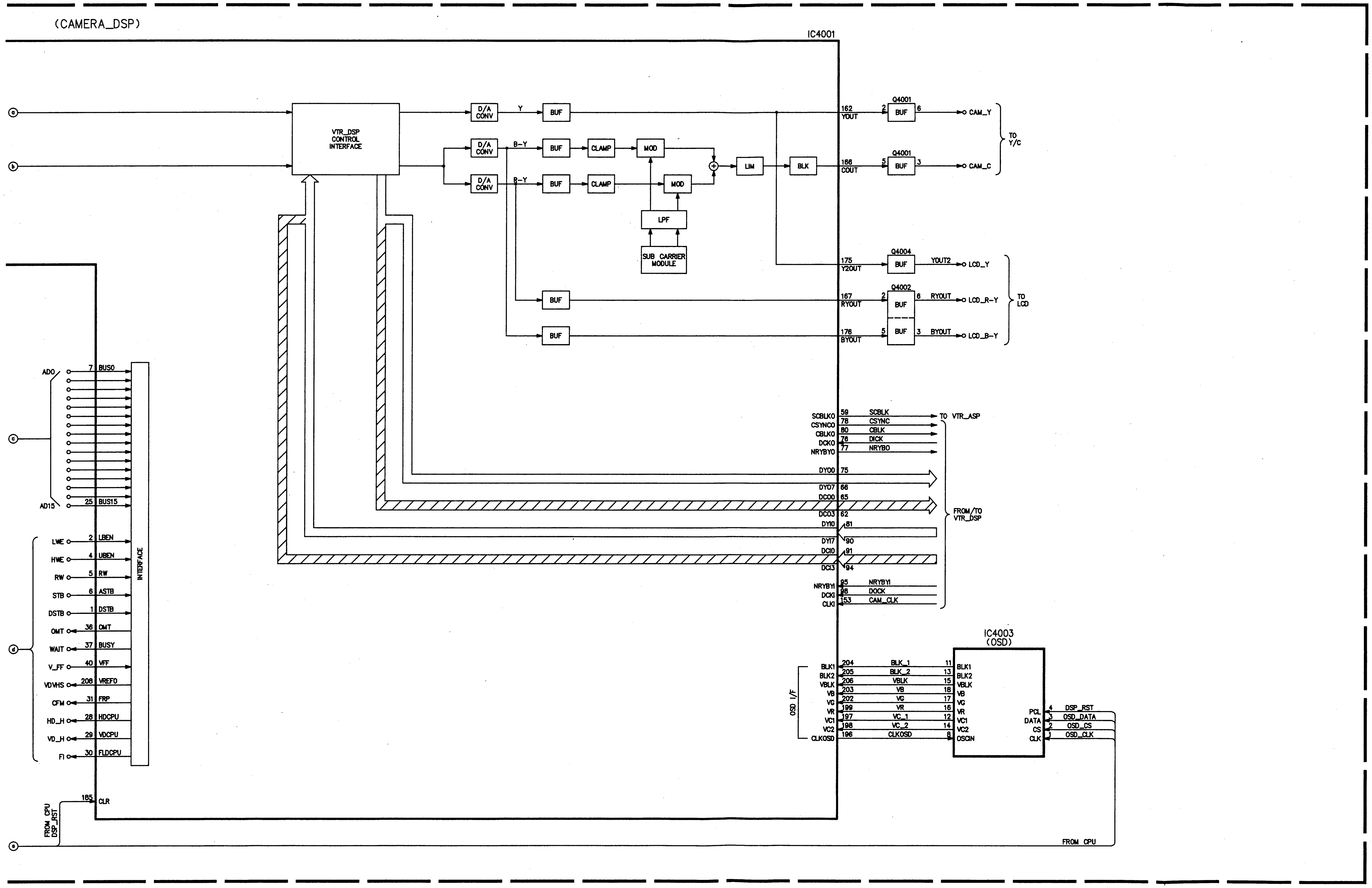

T7001
QQH0011-001
C7015
150P 1000V
H
C7009
100 10V
C7004
220 10V
VR7003
5.5M
HK
G1
G3
L7001
PELN1175
G2
L7002
100u
C7016
330P 500V
C7002
220 10V
1
CN7001
IL-Y-4P-S15
4
68u
L7003
R7014
4.7K
1K
R7013
C7012
1 50V
C7006
0.015
C7007 (3216)
1
33
R7007
R7003
#
R7031
10K
R7009
1
CN7002
B5B-ZR
5
0.1
C7001
C7003
220 10V

4.19 POWER SYSTEM BLOCK DIAGRAM


01 MAIN
JACK SECTION
BATT. TERM J502
BATT+
REG SECTION
UNREG
F6001
L6001
L6002
D_PWR_ON
Q6131 DRUM POWER
POWER CTL
IC6001
IC6001_34PIN
Q6141 CAP POWER
R6133
R6142
DRUM_PWR
CAP_PWR
Q6111 REG 3.2V
R6112
REG_3.2V
Q6151 REG 2V
D6152
REG_2V
REG_1.8V
R6152
Q6121 REG 4.8V
R6122
REG_4.8V
F6003
Q6123 VFREG 4.8V
VFREG_4.8V
Q6124 ES
VF_CTL
Q6161 SW REG
C6173
D6161
D6162
Q6164 15V REG
REG_15V
Q6162 DIF AMP
Q6163 12V REG
REG_12V
C6167
D6164
D6163
Q6167 -15V REG
REG_-15V
Q6165 DIF AMP
Q6166 -8V REG
REG_-8V
CPU SECTION
E² PROM IC104
RESET IC106
RCT IC107
CPU IC101
IC102 AL 3.2V
DA101
(H: ON L: OFF)
IC105 EVR
LITHIUM
CN26
Li+
JIG-CONN CN25
AL_3.2V
VPP_7.8V
MECHA MDA SECTION
LM_UNREG
CTL AMP SECTION
PRE/REC SECTION
RF_4.8V
L3501
SPEAKER SECTION
SPK+
SPK-
VTR ASP SECTION
REG_12V
VTR DSP SECTION
IO_3.2V
CAMERA DSP SECTION
REG_1.8V
REG_15V
REG_-8V
L4001
L5203
L5202
IRIS & AF/ZOOM SECTION
L4503
VF/MTIF SECTION
R7808
L7801
LCD_3.2V
VF_BL_4.8V
CN3
CAPSTAN MOTOR
M
CN7
CTL_ERS
CN27
SPEAKER
02 CCD
CN22
CCD_15V
CCD_-8V
07 MONITOR
CN16
CN7501
(HV)
HV
CN7503
(BL)
(LCD DRIVE)
(MONI_LCD)
CN7502
L7614
L7611
L7610
L7612
REG_-15V
VEE
VSS
VGH
VDD
CN15
OP_4.8V
OP BLOCK
60 E VF (B/W)
VF_BL_4.8V
CN12
OPE (DECK) UNIT
ZOOM UNIT
CN13
CN18
A
B
C
D
E
F
G
H
1
2
3
4
5

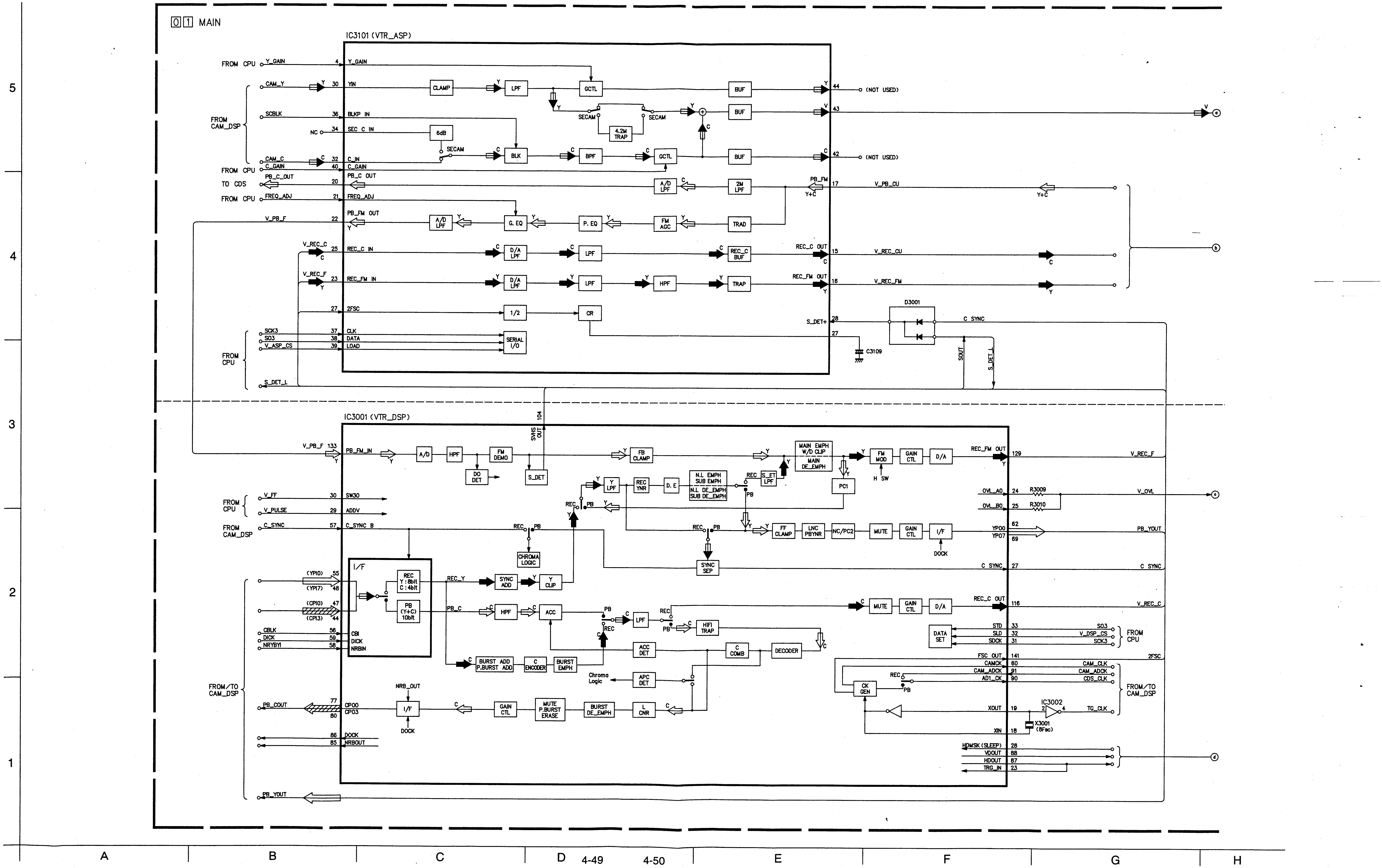
4.20 CAMERA BLOCK DIAGRAM

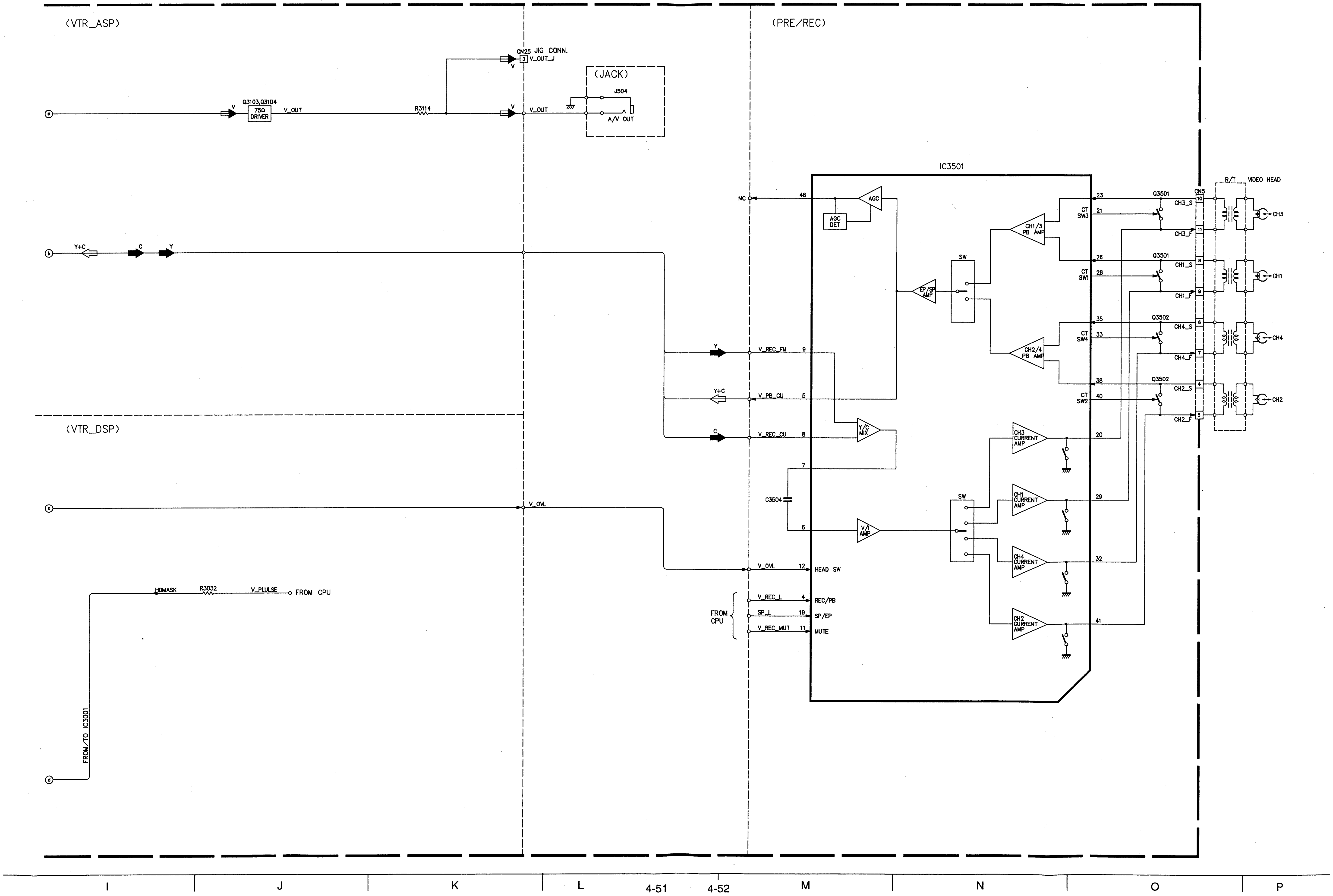

01 MAIN (CAMERA_DSP)
IC5201 (CDS/AGC/AD)
ADCIN
CDSIN
BLKSH
BLKFB
CDS
DC OFFSET
T. G
PGA
A/D CONV
LATCH
SERIAL INTERFACE
OBP
SPBLK
SPSIG
PBLK
SDATA
SCK
CS
ADCLK
D9 D8 D7 D6 D5 D4 D3 D2 D1 D0
AD9 AD8 AD7 AD6 AD5 AD4 AD3 AD2 AD1 AD0
V_PB_C
FROM VTR_ASP
R5202
C5212
C5213
IC4001 (CAMERA_DSP)
OB CLAMP
1H DL
Y/C SEPA (3LINE)
V/H APT CTL
PROCESS
RGB SEPA
WB
γ
G CTL
MATRIX
HDTG
VDTG
LHFO
ID
CLKI
TO VTR_DSP
CAM_CLK (8FSC)
02 CCD
CN22
CCD_OUT
Q5301
BUF
IC5301
CCD IMAGE SENSOR
V1 V2 V3 V4 SUB H1 H2
OPTICAL BLOCK
IC5202
(TG/V_DRIVER)
XSHP XSHD OBCLP PBLK
SSI SSK AHD VHD VGAT ID SEN DSGAT CK CLDCLK RST
CDS_CLK
TG_CLK
CAM_ADCK
FROM/TO VTR_DSP
R5215
REG 3.2V
C5222
IRIS CTL
(CPU)
CDS_CS
SCK3
SO3
CCD_SCS
DSGAT
IC101
CPU
CCD_CS
FOCUS
ZOOM_SENS
LENS_CLK
VD_H
SO3
LENS_MDA_CS
DPS_RST
IRIS_O/C
HALL_A/D
IRIS_PWM
IR_FLICK
IR_A/D
AD0
AD15
LBEN_L UBEN_L R/W_L DSTB_L ASTB OMT WAIT V_FF VDVHS FRP HD VD FI
LWE HWE RW STB DSTB OMT WAIT_L V_FF VDVHS CFM HD_H VD_H FI
OSD_CLK OSD_CS OSD_DATA DSP_RST
X1 X2
X101 MAIN SYSTEM CLOCK (16MHz)
(IRIS & AF/ZOOM)
CN15
F_SENS Z_SENS
FOCUS3 FOCUS1 FOCUS4 FOCUS2
ZOOM2 ZOOM4 ZOOM3 ZOOM1
IC4501
BRIDGE DRIVER
PULSE GENERATOR
SERIAL-PARARELLE DECODER
OSCIN VSYNC SCLK SDATA LATCH RSET
LENS_CS
IC4201, IC4202
HALL AMP
MOTOR DRIVE AMP
HE_IN+ HE_OUT- HE_IN- HE_OUT+
GND/DRIVE DUMP- DRIVE+ DUMP+
R4209, C4206
LPF
(COMP)
REG 4.8V
Q4251
R4262
C4256
IC4251
AMP
IR_FLICK
IR_DC
a b c d e
A B C D E F G H
1 2 3 4 5



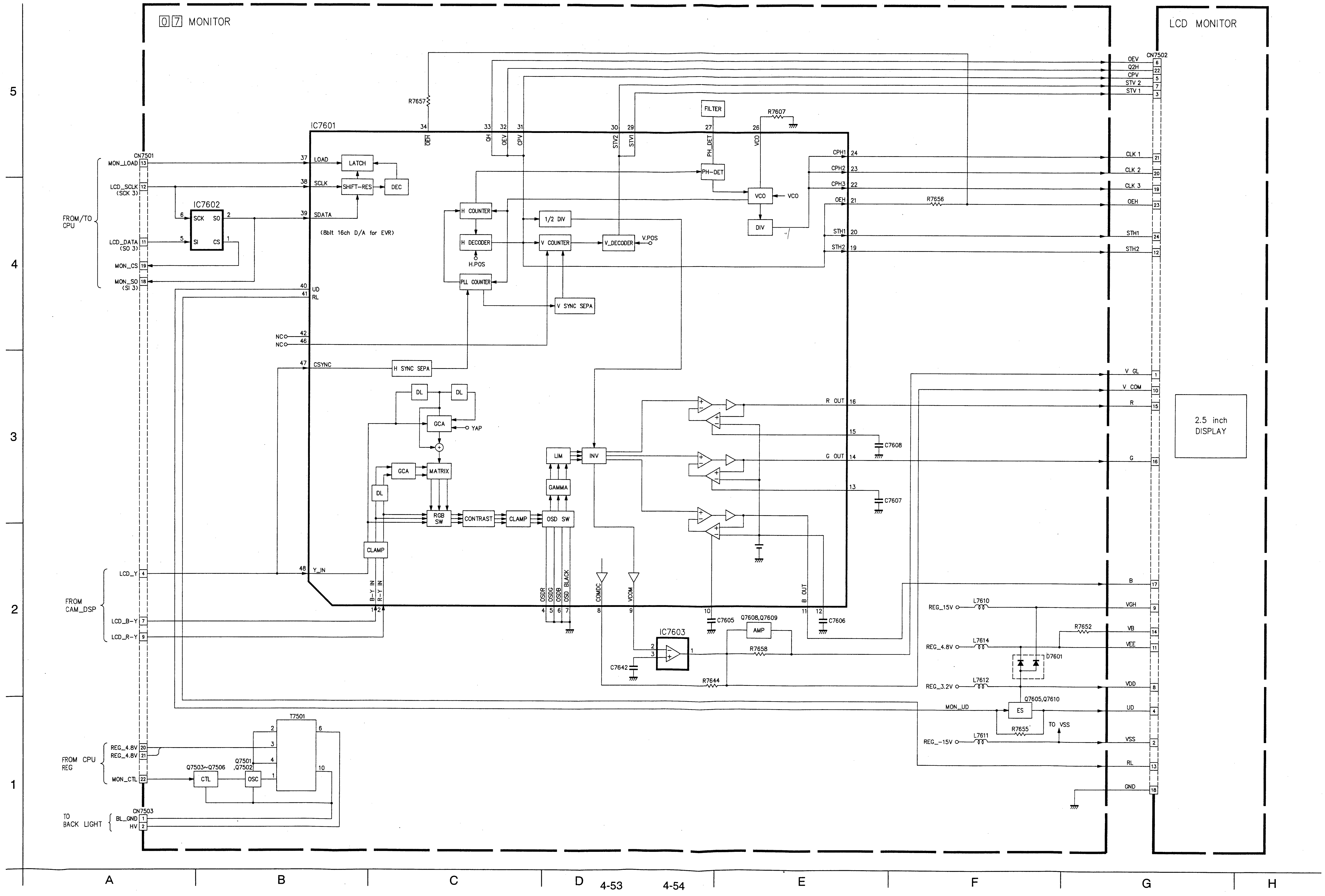
(CAMERA_DSP)
IC4001
VTR_DSP CONTROL INTERFACE
D/A CONV
Y
B-Y
R-Y
BUF
CLAMP
MOD
LPF
SUB CARRIER MODULE
LIM
BLK
162 YOUT
166 COUT
175 Y2OUT
167 RYOUT
176 BYOUT
Q4001
Q4002
Q4004
CAM_Y
CAM_C
TO Y/C
YOUT2
RYOUT
BYOUT
LCD_Y
LCD_R-Y
LCD_B-Y
TO LCD
ADO
AD15
7 BUS0
25 BUS15
INTERFACE
LWE 2 LBEN
HWE 4 UBEN
RW 5 RW
STB 6 ASTB
DSTB 1 DSTB
OMT 36 OMT
WAIT 37 BUSY
V_FF 40 VFF
VDVHS 208 VREFO
CFM 31 FRP
HD_H 28 HDCPU
VD_H 29 VDCPU
FI 30 FLDCPU
185 CLR
FROM CPU DSP_RST
SCBLKO 59 SCBLK
CSYNCO 78 CSYNC
CBLKO 80 CBLK
DCKO 76 DICK
NRYBYO 77 NRYBO
TO VTR_ASP
DYO0 75
DYO7 66
DCO0 65
DCO3 62
DYI0 81
DYI7 90
DCI0 91
DCI3 94
FROM/TO VTR_DSP
NRYBYI 95 NRYBYI
DCKI 98 DOCK
CLKI 153 CAM_CLK
OSD I/F
BLK1 204 BLK_1 11 BLK1
BLK2 205 BLK_2 13 BLK2
VBLK 206 VBLK 15 VBLK
VB 203 VB 18 VB
VG 202 VG 17 VG
VR 199 VR 16 VR
VC1 197 VC_1 12 VC1
VC2 198 VC_2 14 VC2
CLKOSD 196 CLKOSD 8 OSCIN
IC4003 (OSD)
PCL 4 DSP_RST
DATA 3 OSD_DATA
CS 2 OSD_CS
CLK 1 OSD_CLK
FROM CPU

4.21 Y/C BLOCK DIAGRAM


01 MAIN
IC3101 (VTR_ASP)
FROM CPU
Y_GAIN
CAM_Y
SCBLK
NC
CAM_C
C_GAIN
FROM CAM_DSP
TO CDS
PB_C_OUT
FREQ_ADJ
V_PB_F
V_REC_C
V_REC_F
SCK3
SO3
V_ASP_CS
S_DET_L
YIN
BLKP IN
SEC C IN
C_IN
PB_C OUT
PB_FM OUT
REC_C IN
REC_FM IN
2FSC
CLK
DATA
LOAD
CLAMP
LPF
GCTL
6dB
SECAM
4.2M TRAP
BLK
BPF
BUF
A/D LPF
2M LPF
G. EQ
P. EQ
FM AGC
TRAD
D/A LPF
REC_C BUF
HPF
TRAP
1/2
CR
SERIAL I/O
(NOT USED)
PB_FM
Y+C
V_PB_CU
REC_C OUT
V_REC_CU
REC_FM OUT
V_REC_FM
D3001
S_DET+
C SYNC
C3109
SOUT
S_DET_L
IC3001 (VTR_DSP)
SVHS OUT
104
PB_FM_IN
A/D
FM DEMO
DO DET
S_DET
FB CLAMP
MAIN EMPH W/D CLIP MAIN DE_EMPH
FM MOD
H SW
GAIN CTL
D/A
REC_FM OUT
V_REC_F
Y LPF
REC YNR
D. E
N.L EMPH SUB EMPH N.L DE_EMPH SUB DE_EMPH
S_ET LPF
PC1
OVL_A0
OVL_B0
R3009
R3010
V_OVL
V_FF
V_PULSE
SW30
ADDV
C_SYNC
C_SYNC B
REC
PB
FF CLAMP
LNC PBYNR
NC/PC2
MUTE
I/F
DOCK
YPO0
YPO7
PB_YOUT
CHROMA LOGIC
SYNC SEP
C SYNC
(YPI0)
(YPI7)
(CPI0)
(CPI3)
REC_Y
REC Y : 8bit C : 4bit
PB (Y+C) 10bit
PB_C
SYNC ADD
Y CLIP
ACC
HIFI TRAP
REC_C OUT
V_REC_C
CBLK
DICK
NRYBYI
CBI
NRBIN
BURST ADD P.BURST ADD
C ENCODER
BURST EMPH
ACC DET
C COMB
DECODER
DATA SET
SO3
V_DSP_CS
SCK3
STD
SLD
SDCK
FSC OUT
2FSC
CAMCK
CAM_ADCK
AD1_CK
CAM_CLK
CDS_CLK
CK GEN
Chroma Logic
APC DET
NRB_OUT
PB_COUT
CPO0
CPO3
MUTE P.BURST ERASE
BURST DE_EMPH
L CNR
XOUT
XIN
IC3002
TG_CLK
X3001 (8Fsc)
NRBOUT
HDMSK (SLEEP)
VDOUT
HDOUT
TRG_IN
FROM/TO CAM_DSP
1
2
3
4
5
A
B
C
D
E
F
G
H

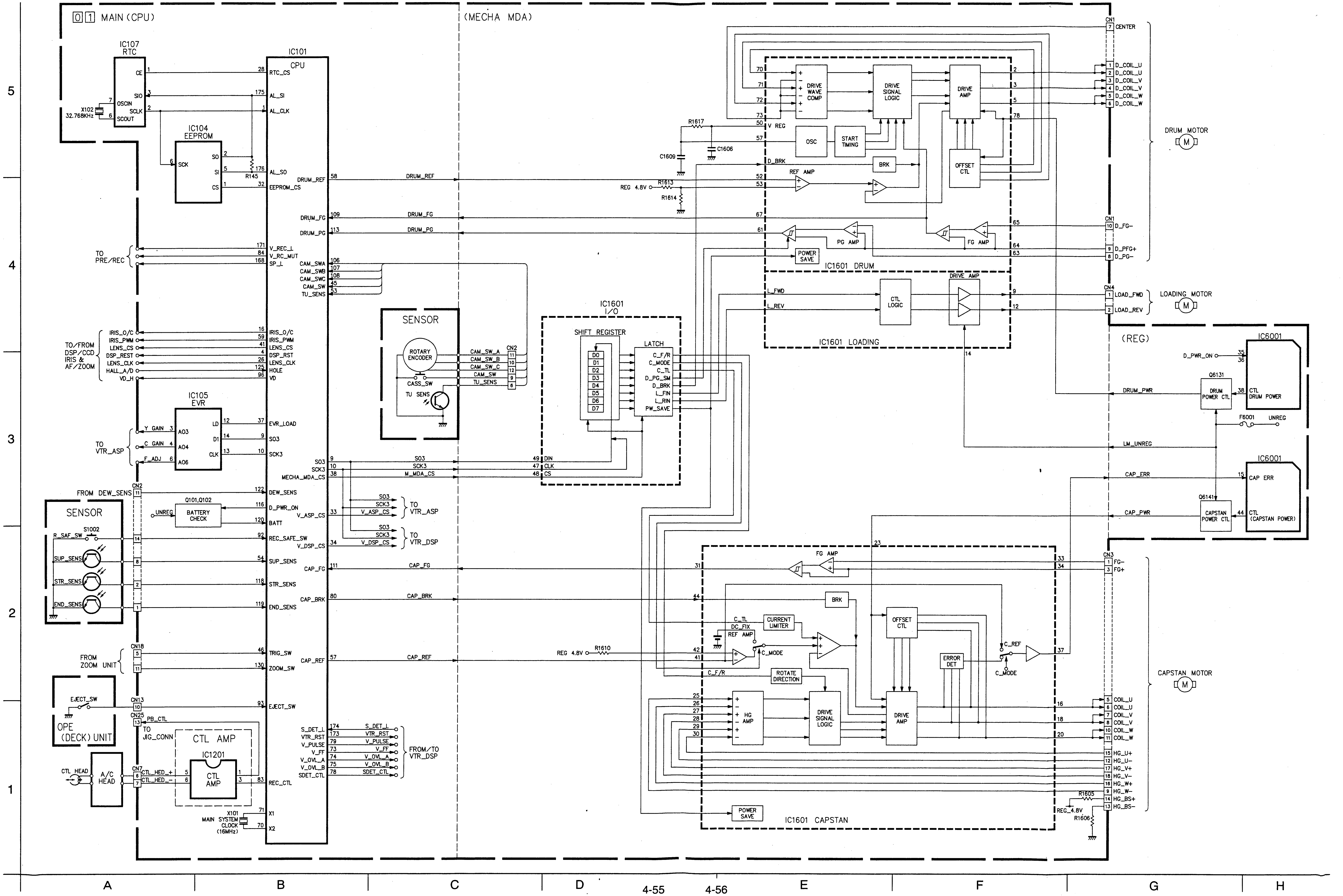

(VTR_ASP)
(PRE/REC)
(VTR_DSP)
CN25 JIG CONN.
3 V_OUT_J
V
(JACK)
J504
A/V OUT
Q3103,Q3104
75Ω DRIVER
V_OUT
R3114
V
V_OUT
a
b
c
d
Y+C
C
Y
IC3501
NC
48
AGC
AGC DET
EP/SP AMP
SW
CH1/3 PB AMP
CH2/4 PB AMP
Y
V_REC_FM
9
Y+C
V_PB_CU
5
C
V_REC_CU
8
Y/C MIX
7
C3504
6
V/I AMP
V_OVL
V_OVL
12
HEAD SW
HDMASK
R3032
V_PLULSE
FROM CPU
FROM/TO IC3001
FROM CPU
V_REC_L
4
REC/PB
SP_L
19
SP/EP
V_REC_MUT
11
MUTE
CH3 CURRENT AMP
CH1 CURRENT AMP
CH4 CURRENT AMP
CH2 CURRENT AMP
20
29
32
41
23
CT SW3
21
26
CT SW1
28
35
CT SW4
33
38
CT SW2
40
Q3501
Q3501
Q3502
Q3502
CN5
CH3_S
CH3_F
CH1_S
CH1_F
CH4_S
CH4_F
CH2_S
CH2_F
10
11
8
9
6
7
4
5
R/T
VIDEO HEAD
CH3
CH1
CH4
CH2
I
J
K
L
M
N
O
P

4.22 MONITOR BLOCK DIAGRAM



07 MONITOR
LCD MONITOR
IC7601
IC7602
IC7603
CN7501
CN7502
CN7503
FROM/TO CPU
MON_LOAD
LCD_SCLK (SCK 3)
LCD_DATA (SO 3)
MON_CS
MON_SO (SI 3)
SCK
SO
SI
CS
LOAD
SCLK
SDATA
LATCH
SHIFT-RES
DEC
(8bit 16ch D/A for EVR)
UD
RL
NC
CSYNC
H SYNC SEPA
Y_IN
FROM CAM_DSP
LCD_Y
LCD_B-Y
LCD_R-Y
B-Y IN
R-Y IN
CLAMP
DL
GCA
YAP
MATRIX
RGB SW
CONTRAST
OSD SW
GAMMA
LIM
INV
OSDR
OSDG
OSDB
OSD BLACK
COMDC
VCOM
H COUNTER
H DECODER
H.POS
PLL COUNTER
1/2 DIV
V COUNTER
V_DECODER
V.POS
V SYNC SEPA
PH-DET
FILTER
VCO
DIV
R7657
R7607
R7656
R7658
R7644
R7652
R7655
OEH
QH
OEV
CPV
STV2
STV1
PH_DET
CPH1
CPH2
CPH3
STH1
STH2
R OUT
G OUT
B OUT
C7608
C7607
C7605
C7606
C7642
Q7608,Q7609
AMP
OEV
Q2H
CPV
STV 2
STV 1
CLK 1
CLK 2
CLK 3
OEH
STH1
STH2
V GL
V COM
R
G
B
VGH
VB
VEE
VDD
UD
VSS
RL
GND
2.5 inch DISPLAY
REG_15V
REG_4.8V
REG_3.2V
REG_-15V
L7610
L7614
L7612
L7611
D7601
Q7605,Q7610
ES
MON_UD
TO VSS
T7501
FROM CPU REG
REG_4.8V
MON_CTL
Q7503~Q7506
CTL
Q7501,Q7502
OSC
TO BACK LIGHT
BL_GND
HV
A
B
C
D
E
F
G
H
1
2
3
4
5

4.23 CPU/MDA BLOCK DIAGRAM

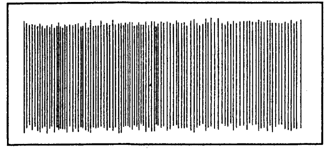


01 MAIN (CPU)
(MECHA MDA)
IC107 RTC
CE
SIO
OSCIN
SCLK
SCOUT
X102 32.768KHz
IC101 CPU
RTC_CS
AL_SI
AL_CLK
IC104 EEPROM
SCK
SO
SI
CS
R145
AL_SO
EEPROM_CS
DRUM_REF
DRUM_FG
DRUM_PG
TO PRE/REC
V_REC_L
V_RC_MUT
SP_L
CAM_SWA
CAM_SWB
CAM_SWC
CAM_SW
TU_SENS
TO/FROM DSP/CCD IRIS & AF/ZOOM
IRIS_O/C
IRIS_PWM
LENS_CS
DSP_REST
LENS_CLK
HALL_A/D
VD_H
HOLE
VD
IC105 EVR
LD
D1
CLK
A03
A04
A06
Y GAIN
C GAIN
F_ADJ
TO VTR_ASP
EVR_LOAD
SO3
SCK3
MECHA_MDA_CS
SENSOR
ROTARY ENCODER
CASS_SW
TU SENS
CN2
CAM_SW_A
CAM_SW_B
CAM_SW_C
CAM_SW
TU_SENS
IC1601 I/O
SHIFT REGISTER
D0
D1
D2
D3
D4
D5
D6
D7
LATCH
C_F/R
C_MODE
C_TL
D_PG_SM
D_BRK
L_FIN
L_RIN
PW_SAVE
DIN
CLK
CS
M_MDA_CS
FROM DEW_SENS
DEW_SENS
Q101,Q102 BATTERY CHECK
UNREG
D_PWR_ON
BATT
V_ASP_CS
V_DSP_CS
TO VTR_ASP
TO VTR_DSP
SENSOR
S1002
R_SAF_SW
SUP_SENS
STR_SENS
END_SENS
REC_SAFE_SW
CAP_FG
CAP_BRK
FROM ZOOM UNIT
TRIG_SW
ZOOM_SW
CAP_REF
EJECT_SW
OPE (DECK) UNIT
PB_CTL
TO JIG_CONN
CTL AMP
IC1201 CTL AMP
CTL HEAD
A/C HEAD
CTL_HED_+
CTL_HED_−
REC_CTL
X101 MAIN SYSTEM CLOCK (16MHz)
X1
X2
S_DET_L
VTR_RST
V_PULSE
V_FF
V_OVL_A
V_OVL_B
SDET_CTL
FROM/TO VTR_DSP
IC1601 DRUM
DRIVE WAVE COMP
DRIVE SIGNAL LOGIC
DRIVE AMP
OSC
START TIMING
BRK
OFFSET CTL
V REG
R1617
C1609
C1606
D_BRK
REF AMP
REG 4.8V
R1613
R1614
PG AMP
FG AMP
POWER SAVE
CN1
CENTER
D_COIL_U
D_COIL_V
D_COIL_W
D_FG−
D_PFG+
D_PG−
DRUM MOTOR
IC1601 LOADING
L_FWD
L_REV
CTL LOGIC
DRIVE AMP
CN4
LOAD_FWD
LOAD_REV
LOADING MOTOR
(REG)
IC6001
D_PWR_ON
Q6131
DRUM_PWR
DRUM POWER CTL
CTL DRUM POWER
F6001
UNREG
LM_UNREG
CAP_ERR
CAP ERR
Q6141
CAP_PWR
CAPSTAN POWER CTL
CTL (CAPSTAN POWER)
IC1601 CAPSTAN
FG AMP
CN3
FG−
FG+
BRK
C_TL
DC_FIX
REF AMP
CURRENT LIMITER
OFFSET CTL
REG 4.8V
R1610
C_MODE
C_REF
ERROR DET
C_F/R
ROTATE DIRECTION
HG AMP
DRIVE SIGNAL LOGIC
DRIVE AMP
COIL_U
COIL_V
COIL_W
HG_U+
HG_U−
HG_V+
HG_V−
HG_W+
HG_W−
HG_BS+
HG_BS−
R1605
R1606
POWER SAVE
CAPSTAN MOTOR
A
B
C
D
E
F
G
H
1
2
3
4
5

4.24 WAVEFORMS

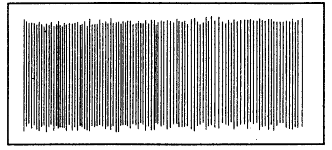
– VTR DSP –

WF1 IC3001-129



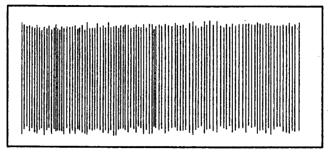
REC 0.76 Vp-p
20mV/10μse/DIV

WF2 IC3001-116



REC 0.46 Vp-p
10mV/10msec/DIV

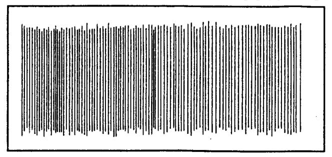
WF3 IC3001-133



PB 0.9 Vp-p
50mV/10μsec/DIV

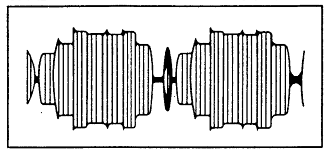
– VTR ASP –

WF1 IC3101-16



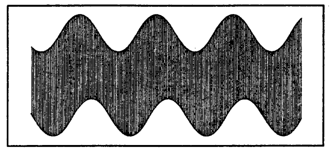
REC 0.3 Vp-p
10mV/10μsec/DIV

WF2 IC3101-15



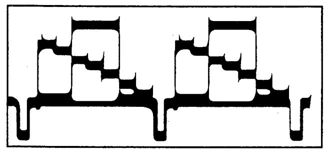
REC 0.2 Vp-p
10mV/10μsec/DIV

WF3 IC3101-17



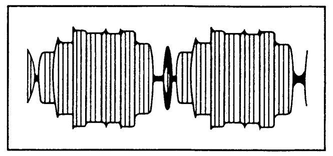
PB 0.4 Vp-p
10mV/10μsec/DIV

WF4 IC3101-30



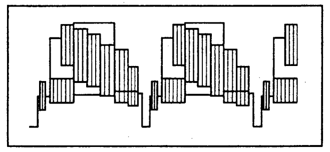
REC 0.8 Vp-p
20mV/10μsec/DIV

WF5 IC3101-32



REC 0.52 Vp-p
10mV/10μsec/DIV

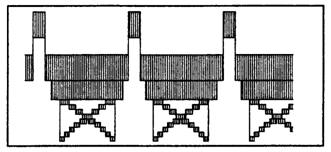
WF6 IC3101-43



REC 2.4 Vp-p
PB 2.2 Vp-p
50mV/20μsec/DIV

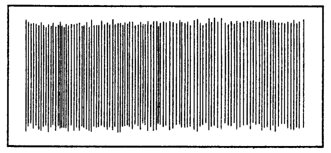
– CAMERA DSP –

WF1 IC5201-26



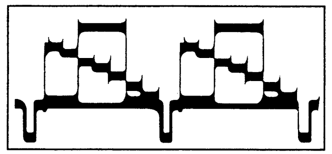
EE 1.5 Vp-p
20mV/20μsec/DIV

WF2 IC5201-27



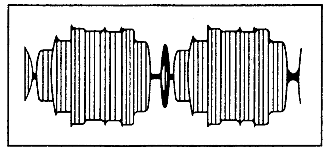
PB 0.6 Vp-p
50mV/0.5mV/DIV

WF3 IC4001-162



REC 0.84 Vp-p
20mV/10μsec/DIV

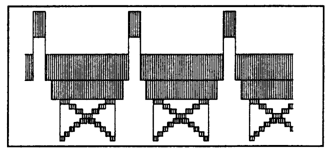
WF4 IC4001-166



REC 0.53 Vp-p
10mV/10μsec/DIV

– CCD –

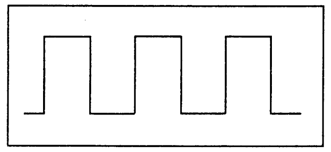
WF1 Q5301-B



EE 1.5 Vp-p
20mV/20μsec/DIV

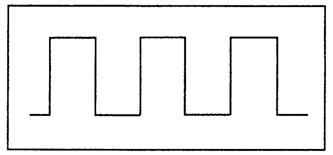
– CPU –

WF1 IC101-109



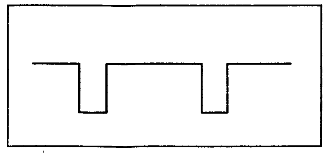
REC/PB 3.2 Vp-p
0.1V/0.5msec/DIV

WF2 IC101-111



REC/PB 0.8 Vp-p
0.1V/0.1msec/DIV

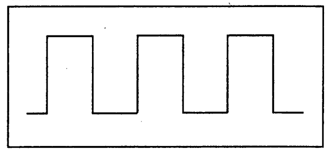
WF3 IC101-113



REC/PB 3.2 Vp-p
0.1V/5msec/DIV

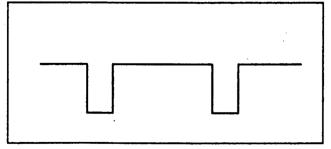
– MECHA MDA–

WF1 IC1601-31



REC/PB 3.2 Vp-p
0.1V/0.1msec/DIV

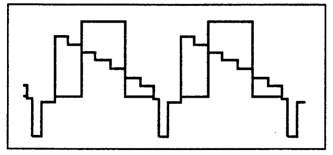
WF2 IC1601-61



REC/PB 3.2 Vp-p
0.1V/5msec/DIV

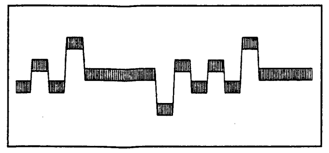
– MONITOR –

WF1 IC7601-48



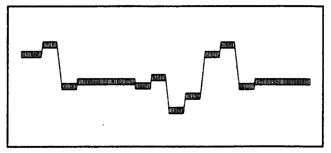
EE 0.9 Vp-p
20mV/10μsec/DIV

WF2 IC7601-1



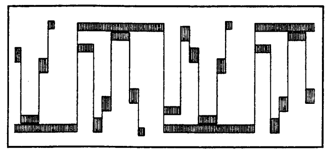
EE 0.27 Vp-p
10mV/10μsec/DIV

WF3 IC7601-2



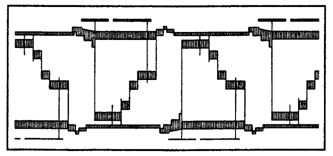
EE 0.25 Vp-p
10mV/10μsec/DIV

WF4 IC7601-16



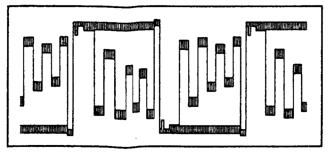
EE4.0 Vp-p
0.1V/20μsec/DIV

WF5 IC7601-14



EE 4.0 Vp-p
0.1V/20μsec/DIV

WF6 IC7601-11



EE 4.2 Vp-p
0.1mV/20μsec/DIV

4.25 VOLTAGE CHARTS

<CPU>

MODE PIN NO.	REC	PLAY
IC101		
1	3.2	3.2
2	3.2	3.2
3	3.2	3.2
4	3.2	3.2
5	0	0
6	0	0
7	3.2	3.2
8	3.2	3.2
9	0.9	0.7
10	0	0
11	3.1	3.1
12	1.4	1.4
13	3.2	3.2
14	0	0
15	0	0
16	1.6	0
17	0	0
18	3.2	3.2
19	3.2	0
20	0	0
21	3.2	0
22	0	0
23	0	0
24	2.5	2.5
25	2.9	2.9
26	1.6	1.6
27	3.2	3.2
28	0	0
29	1.6	1.6
30	0	0
31	2.3	2.3
32	3.2	3.2
33	3.2	3.2
34	3.2	3.2
35	3.2	3.2
36	0	0
37	0	0
38	0	0
39	3.2	3.2
40	0	0
41	0	0
42	3.2	3.2
43	0	0
44	3.1	3.2
45	0	0
46	2.7	2.7
47	2.6	2.6
48	2.6	2.6
49	2.7	0
50	3	2.7
51	0	2.6
52	2.9	2.7
53	-	2.8
54	-	-
55	0	0
56	0	0
57	1.7	1.7
58	1.5	1.5
59	1.6	0
60	0	0
61	0	0
62	0	0
63	0	0
64	0	0
65	0	0
66	3.2	3.2
67	3.2	3.2
68	0	0
69	3.2	3.2
70	1.6	1.6
71	1.3	-
72	0	0
73	1.6	1.6
74	0	0
75	0	0
76	0	0
77	0	0
78	0	0
79	0	0
80	0	0
81	3.2	3.2
82	0	0
83	1.9	0
84	0	3.2
85	3.2	0
86	3.2	0
87	3.2	0
88	0	0
89	0	0
90	3.2	3.2
91	3.2	0
92	3	3.2
93	3	3
94	3.2	3.2
95	0	0
96	0	0
97	0	0
98	3.2	3.2
99	3.2	3.2
100	0	0.6
101	3	2.6
102	3.2	3.2
103	1.6	1
104	2.6	2.6
105	0	0
106	0	0
107	3.2	3.1
108	3.1	3.1
109	1.5	1.6
110	0	0
111	1.4	1.5
112	1.9	1.9
113	2.8	2.9
114	0	0
115	0	0
116	3.2	3.2
117	2.3	2.7
118	3.2	3.2
119	3.2	3.2
120	2.1	2.1
121	2.9	2.9
122	0	0
123	0	0
124	0	0
125	1.6	0.5
126	3.1	3.2
127	0	0
128	3.2	3.2
129	1.9	1
130	1.6	1.6
131	2.6	3
132	3.1	3.1
133	3.2	3.2
134	0	0
135	3.2	3.2
136	3.2	3.2
137	0	0
138	0	0
139	0	0
140	3.2	3.2
141	3.2	3.2
142	3.2	3.2
143	0	0
144	0	0
145	0.8	0.7
146	0.8	0.7
147	0.7	0.6
148	0.8	0.6
149	0.7	0.7
150	0.6	0.6
151	0.6	0.6
152	0.6	0.5
153	3.2	3.2
154	0	0
155	0.7	0.9
156	0.7	0.9
157	0.6	0.7
158	0.7	0.7
159	0.7	0.5
160	1.1	0.4
161	1.1	0.5
162	1	0.4
163	3.2	3.2
164	3.2	3.2
165	3.2	3.2
166	3.2	0
167	0	0
168	0	0
169	0	0
170	3.1	3.1
171	0	3.2
172	0	3.2
173	0	0
174	0	3.1
175	0	3.2
176	0	3.2
IC102		
1	3.3	3.3
2	0	0
3	6.8	6.8
IC104		
1	3.2	3.2
2	0	0
3	0.7	3.2
4	0	0
5	0.5	0
6	3.2	0
7	0.5	3.2
8	3.2	3.2
IC105		
1	0	0
2	2.1	2.1
3	2	2
4	1.1	1.1
5	3.2	1.4
6	3.2	1.4
7	3	3
8	3.2	3.2
9	3.2	3.2
10	0	0
11	2.3	1.9
12	0	0
13	3.1	3.1
14	0.9	0.8
15	2.1	2.1
16	0	0
IC106		
1	0	0
2	0	0
3	3.2	3.2
4	3.2	3.2
IC107		
1	0	0
2	3.2	3.2
3	0	3.2
4	0	0
5	0	0
6	0.8	0.5
7	1.1	0.6
8	3.1	3.1
Q101		
E	6.8	6.8
C	6.8	6.8
B	6	6
Q102		
E	0	0
C	0	0
B	3.2	3.2
Q103		
E	0	0
C	0	4.8
B	0.6	0
Q104		
E	0	0
C	4.6	4.6
B	0	0
Q105		
E	4.8	4.8
C	-7.5	-5.5
B	4.8	4.8
Q106		
E	0	0
C	0	0
B	3	3.2
Q107		
E	4.8	4.8
C	4.8	4.8
B	0	0
Q110		
E	0	0
C	0	0
B	3.2	3.2

<CTL AMP>

MODE PIN NO.	REC	PLAY
IC1201		
1	1.8	1.8
2	3.2	0
3	1.9	0
4	0	0
5	0.6	1.7
6	0.4	1.7
7	0.5	0
8	1.7	1.2
9	1.7	1.7
10	2	1.1
11	0	0
12	0	0.9
13	0.8	0.8
14	3.2	3.2

<SPEAKER>

MODE PIN NO.	REC	PLAY
IC2401		
1	1.4	1.3
2	3.2	3.2
3	1.3	1.3
4	0	0
5	0.9	0.6
6	0	0
7	0	0
8	0.5	0.6

<MECHA MDA>

MODE PIN NO.	REC	PLAY
IC1601		
1	0	0
2	1.4	1.4
3	1.4	1.5
4	0	0
5	1.5	1.5
6	0	0
7	0	0
8	0	0
9	0.8	2
10	0	0
11	0	0
12	0.5	2
13	0	0
14	6.7	6.7
15	0	0
16	2.4	0.8
17	0	0
18	0.9	0.8
19	0	0
20	0	0.8
21	0	1.2
22	0	1.1
23	2	3.2
24	6.7	6.8
25	2.4	2.4
26	2.4	2.4
27	2.4	2.4
28	2.4	2.4
29	2.4	2.4
30	2.4	2.4
31	1.6	1.6
32	2.4	2.4
33	2.4	2.4
34	2.4	2.4
35	4.8	4.8
36	3.2	3.2
37	1.1	1.1
38	0.6	0.6
39	0.6	0.6
40	1.2	1.2
41	1.7	1.7
42	4.8	4.8
43	4.8	4.8
44	0	0
45	0	0
46	0	0
47	3.1	3.1
48	0	0
49	0.8	0.7
50	2	2
51	0	0
52	1.5	1.5
53	1.3	1.3
54	4.6	4.8
55	0.6	0.6
56	0.6	0.6
57	0	1
58	0	0.6
59	0	0
60	1.7	1.7
61	2.9	2.9
62	1.9	2
63	2.5	2.5
64	2.3	2.5
65	2.5	2.5
66	2.4	2.5
67	1.6	1.6
68	1.9	1.9
69	0	0
70	1.5	1.5
71	1.5	1.5
72	1.5	1.5
73	1.5	1.5
74	1.5	1.5
75	0.4	0.4
76	3.9	3.9
77	6.8	6.8
78	3.9	4
79	0	0
80	0	0

<VTR DSP>

MODE PIN NO.	REC	PLAY
IC3001		
1	3.2	3.2
2	3.2	3.2
3	0	0
4	1.9	1.8
5	0	0
6	0	0
7	0	0
8	0	0
9	0	0
10	0	0
11	0	0
12	0	0
13	3.2	3.2
14	1.9	1.8
15	0	0
16	0	0
17	3.2	3.2
18	1.5	1.5
19	1.5	1.4
20	0	0
21	0	0
22	0	0
23	2.9	3
24	0	0
25	0	0
26	0	0
27	0	0
28	0	0
29	0	0
30	1.6	1.6
31	3.1	3.1
32	3.2	3.2
33	0.6	0.7
34	3.2	3.2
35	3.2	3.2
36	3.2	3.2
37	0	0
38	0	0
39	0	0
40	0	0
41	0	0
42	0	0
43	0	0
44	1.5	0
45	0.8	0
46	0.9	1.6
47	0.9	1.5
48	0.8	1.5
49	0.7	1.5
50	0.8	1.5
51	0.6	1.5
52	1.2	1.6
53	1.5	1.6
54	1.8	1.5
55	1.2	1.5
56	2.4	2.4
57	2.9	2.9
58	1.5	1.5
59	1.6	1.6
60	1.3	1.3
61	3.2	1.5
62	1.1	1.6
63	1.3	1.1
64	1.1	2.6
65	1	0.6
66	0.1	0.6
67	0.7	2.1
68	2	1.2
69	1.2	1.8
70	1.9	0
71	1.9	0
72	0	0
73	0	0
74	0	0
75	0	0
76	0	0
77	1	1.7
78	0.9	1.6
79	1	1.5
80	1.6	1.5
81	0	0
82	0	0
83	0	0
84	0	0
85	1.5	1.6
86	1.4	1.4
87	2.9	2.9
88	3.2	3.2
89	0	0
90	1.6	1.5
91	1.6	1.6
92	1.3	1.3
93	0	0
94	0	0
95	0	0
96	0	0
97	0	0
98	0	0
99	0	0
100	0	0
101	0	0
102	0	0
103	0	0
104	0	3.2
105	3.2	3.2
106	0	0
107	0	0
108	0	0
109	3.2	3.2
110	3.2	3.2
111	0	0
112	1.9	1.8
113	1.9	1.8
114	0	0
115	3.2	0
116	0	0
117	0.8	0
118	1.2	1.3
119	2	1.9
120	0	0
121	0	0
122	0.8	0
123	3.2	3.2
124	0	0
125	0	0
126	1	0
127	1.8	3.2
128	1.8	1.8
129	0	0
130	3.2	1
131	0	0
132	3.2	3.2
133	1.5	1.5
134	1.5	1.5
135	2.2	2.2
136	3.2	3.2
137	0.8	0.8
138	3.2	3.2
139	0	0
140	0	0
141	1.5	1.5
142	3.2	3.2
143	3.2	3.2
144	3.2	3.2
IC3002		
1	0	0
2	1.5	1.5
3	0	0
4	1.7	1.7
5	3.2	3.2
Q3002		
1	0.8	0.5
2	1.4	1.4
3	3.2	3.2
4	2.2	2.2
5	2.9	2.9
6	3.2	3.2
Q3003		
E	2	2
C	1.9	1.9
B	1.3	1.3
Q3004		
E	0	0
C	0.4	0.4
B	1.3	1.3

<PRE/REC>

MODE PIN NO.	REC	PLAY
IC3501		
1	1.2	0
2	0.5	0
3	2.4	2.4
4	0	3.2
5	4.4	2.6
6	1.5	0
7	1.7	2.4
8	2.3	2.3
9	2.3	2.3
10	3.1	3.1
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	3	1.8
17	3	2.9
18	0	0
19	0	0
20	4	0
21	3.3	0.6
22	4	0
23	0	0.6
24	0	0
25	0	0
26	0	0.6
27	4	0
28	3.8	0.6
29	4	0
30	4.7	0
31	4.7	0
32	4	0
33	-	0.6
34	4	0
35	0	0.6
36	0	0
37	0	0.7
38	0	0.6
39	4	0
40	-	0.5
41	4	0
42	3	-0.7
43	0	0
44	4.8	4.8
45	0	0
46	2.3	0
47	3.8	2.6
48	4.2	2.4
IC3901		
1	2	0
2	2	0
3	0	0
4	0	0
5	4	0
6	2	0
7	2	0
8	4	0
Q3501		
1	4	0
2	4	0.5
3	4	0
4	4	0
5	-	0.5
6	4	0
Q3502		
1	4	0
2	-0.6	
3	4	0
4	0	0
5	-0.6	
6	4	0
Q3506		
E	0	0
C	0	0
B	0	3.2
Q3901		
E	4.8	4.8
C	4.7	-3.1
B	0	4.8
Q3902		
E	0	0
C	4.8	4.8
B	3.2	0
Q3903		
E	1.6	0
C	4.7	-3.1
B	4.7	3.1
Q3904		
E	0	0
C	2	0
B	0	3.1

<VTR ASP>

MODE PIN NO.	REC	PLAY
IC2001		
1	1.5	3.2
2	1.5	0
3	1.5	0
4	1.4	3.2
5	1.5	3.2
6	1.5	0
7	0	0
8	1.5	0
9	1.5	3.2
10	1.5	0
11	1.4	1.3
12	0	0
13	1.4	1.3
14	3	3.2
IC3101		
1	3.1	1.4
2	2.4	2.4
3	2.4	2.4
4	2.4	2.5
5	0	0.4
6	0	0
7	2.2	2.4
8	0	0
9	2.4	2.4
10	2.7	2.5
11	2.8	2.5
12	0	2.5
13	4.8	4
14	0	0
15	2.9	1.4
16	2.3	1.5
17	2.2	2.1
18	0	2.1
19	4.8	4.8
20	0.9	2.2
21	0	2.3
22	2.9	2.3
23	2.9	2.2
24	0	0
25	2.8	0.5
26	2.9	2.8
27	2.8	0.6
28	0	2.6
29	2.5	2.5
30	1.9	2
31	0	0
32	2.8	2.8
33	0	0.7
34	2.9	2.9
35	0	0.6
36	3.2	3.2
37	3.1	3.1
38	0.9	0.7
39	3.2	3.2
40	1.1	1.1
41	2	2
42	2.1	2.1
43	2.5	2.5
44	2.5	2.5
45	0	2.4
46	4.8	4.8
47	2.5	2.5
48	2.4	2.4
Q2001		
E	3	3.2
C	1.4	3.2
B	3.2	0.9
Q2007		
1	-10.4	0
2	-16.8	0.7
3	0	0
4	-10.7	0
5	-16.7	0.7
6	0	0
Q2008		
1	3	1.8
2	3.2	1.2
3	3.2	1.2
4	3	1.8
5	3.2	1.2
6	-16.8	0.8
Q2071		
E	11.6	11.6
C	12.2	12.3
B	12.1	12.1
Q2072		
1	4.2	4.2
2	4.7	4.8
3	11.6	11.7
4	10.4	10.4
5	11	11
6	11	11
Q3103		
1	1.9	2
2	2.5	2.6
3	4.8	4.8
4	2.5	2.6
5	3.1	3.2
6	4.8	4.8
Q3104		
1	3.1	3.2
2	2.5	2.6
3	0	0
4	2.5	2.6
5	1.8	1.9
6	0	0

<CAMERA DSP>

MODE PIN NO.	REC	PLAY
IC4001		
1	3.2	3.2
2	0	0
3	0	0
4	0	0
5	3.2	3.2
6	3.1	3.2
7	0.6	3.2
8	0.6	3.2
9	0.7	0.8
10	3.2	3.2
11	0.6	0.8
12	0.4	1.2
13	0.4	1.2
14	0.4	1.5
15	0	0
16	0.4	1.4
17	0.6	1.6
18	0.7	1.5
19	1.8	1.8
20	0.6	0.5
21	0.6	1.6
22	0	1.5
23	0.4	1.5
24	0	1.8
25	0	1.5
26	0	0
27	1.8	1.8
28	0	0
29	0	0
30	1.6	1.8
31	2.6	2.6
32	1.6	1.6
33	0.7	0.8
34	1.8	1.8
35	1.2	1.2
36	0	0
37	3.1	3.2
38	0	0
39	0	0
40	1.6	1.6
41	1.2	1.7
42	1.2	1.6
43	3.2	3.2
44	1.2	1.6
45	1.1	1.5
46	1.3	1.5
47	0.7	1.3
48	0.6	1.5
49	0.6	1.2
50	0	0
51	1.1	1.5
52	0.8	1.3
53	1	1.5
54	1.5	1.5
55	1.5	1.5
56	1.6	1.6
57	0	0
58	0	0
59	3.2	3.2
60	0	0
61	3.2	3.2
62	1.5	0
63	0.9	0
64	0.8	1.8
65	0.9	1.8
66	0.6	1.7
67	0.7	1.7
68	0.8	1.7
69	0.5	1.7
70	1.3	1.7
71	1.7	1.7
72	0	0
73	1.8	1.7
74	1.8	1.7
75	1.1	1.7
76	1.5	1.5
77	1.6	1.6
78	2.9	2.9
79	1.8	1.8
80	2.4	2.4
81	1.1	1.7
82	1.4	1.7
83	1.7	1.8
84	0.8	1.8
85	0	0
86	1.8	1.8
87	0.5	2.2
88	0.6	2.2
89	2.1	2.2
90	1.2	1.5
91	0.8	1.6
92	0.7	1.5
93	0.8	1.6
94	1.5	1.5
95	1.5	1.6
96	0	0
97	3.2	3.2
98	1.5	1.5
99	3.2	3.2
100	3.2	3.2
101	3.2	3.2
102	0	0
103	3.2	3.2
104	3.2	3.2
105	3.2	3.2
106	3.2	3.2
107	0	0
108	3.2	3.2
109	3.2	0
110	3.2	3.2
111	3.2	3.1
112	1.3	3.1
113	1.2	3.1
114	0	1.9
115	1	2
116	1	3.2
117	0.7	2
118	0.7	0.6
119	0	2
120	0.7	2
121	0.8	0
122	1.3	2
123	1.8	1.5
124	0.8	1.5
125	0.9	1.8
126	1.6	1.5
127	1.5	1.5
128	0	1.5
129	0	0
130	0	0
131	1.8	1.8
132	0	0
133	3.1	0
134	2.7	2.7
135	2.7	2.7
136	0	0
137	0	0
138	1.8	1.8
139	0	0
140	0	0
141	0.5	0
142	0	0
143	0.5	0
144	0.8	1.7
145	2.5	1.6
146	0.8	0
147	3.2	3.2
148	0.8	1.6
149	0.9	1.7
150	1.3	1.6
151	1.2	1.6
152	1.5	1.6
153	1.4	0
154	0	0
155	2.9	0
156	3.1	0
157	0	0
158	3.2	3.2
159	2.5	2.5
160	1.1	1.1
161	1.1	1.1
162	0.4	0.5
163	0	0
164	1.1	1.1
165	1.1	1.1
166	0.4	0.4
167	0.5	0.4
168	0	0
169	2.5	2.5
170	0	0
171	0	0
172	1.2	1.1
173	1.1	1.1
174	0	0
175	0.5	0.4
176	0.4	0.4
177	2.5	2.5
178	1.2	0
179	1.1	1.1
180	1.2	1.2
181	0	0
182	2.5	0
183	1.8	1.8
184	3.2	0
185	3.2	3.2
186	0	0
187	0	0
188	3.2	3.2
189	0	0
190	1.8	1.8
191	3.2	0
192	3.2	3.2
193	1.5	0.7
194	3.1	3.1
195	3	3
196	1.5	1.5
197	0	0
198	0	0
199	0	0
200	0	0
201	3.2	3.2
202	0	0
203	0	0
204	0	0
205	0	0
206	0	0
207	0	0
208	0	0
IC4003		
1	2.9	2.9
2	2.3	2.3
3	2.5	2.6
4	3.2	3.2
5	3.2	0
6	0	0
7	0	0
8	0.8	1.5
9	0	0
10	0	0
11	0	0
12	0	0
13	0	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	3.1	3.1
20	2.9	2.9
IC4004		
1	3.2	3.2
2	0	0
3	1.3	1.3
4	2.5	2.5
5	3.2	3.2
IC4005		
1	0.8	0
2	0	0
3	1.3	1.3
4	0.7	2.9
5	3.2	3.2
IC5201		
1	0	0
2	1.2	1.7
3	1.3	1.7
4	0.8	1.7
5	0.7	1.7
6	0.7	1.7
7	2.3	1.7
8	0.6	1.7
9	0.7	1.7
10	0.7	1.6
11	0	1.8
12	0	0
13	0	0
14	0	0
15	3.2	3.2
16	1.6	1.5
17	3	0
18	2.8	0
19	2.7	0
20	2.6	0
21	0	0
22	0	0
23	3.2	3.2
24	0	0
25	0	0.6
26	2	0.4
27	1.5	1.6
28	2	0
29	2	0
30	0	0
31	3.1	0.5
32	2	2.1
33	1	1
34	1.5	1.5
35	1.2	1.2
36	0	0.6
37	0	0
38	3.2	3.1
39	0	0.5
40	0	0
41	3.2	3.2
42	0	0
43	3.2	3.2
44	3.1	3.1
45	0.6	0.8
46	3.2	3.2
47	0	0
48	0	0
IC5202		
1	3.2	3.2
2	3.2	3.2
3	1.5	1.6
4	3.1	0
5	3.1	0
6	2.6	0
7	0	0
8	1.7	1.7
9	3.2	3.2
10	1.7	1.6
11	1.6	1.5
12	1.6	1.6
13	3.2	3.2
14	0	0
15	2.8	0
16	2.7	0
17	2.8	0
18	0.4	0
19	3.2	3.2
20	0	3.2
21	1.7	0
22	1.5	0
23	0	0
24	0	0
25	0	2.2
26	0	1.4
27	0	0
28	0	0
29	-7.6	0
30	0	15.1
31	15.1	15.1
32	-7.6	15.1
33	-8.1	-8.2
34	-8.1	-8.2
35	0	0
36	0	1.5
37	0	0.5
38	0	0.5
39	3.1	3.1
40	0.9	0.7
41	0	0
42	0	3.2
43	0	0
44	3.2	3.2
45	0	0
46	3.2	0
47	2.9	0
48	3.1	0
Q4001		
1	0	0
2	0.4	0.5
3	1	1
4	0	0
5	0.4	0.4
6	1	1.1
Q4002		
1	0	0
2	0	0
3	0.8	0.8
4	0	0
5	0	0
6	0.8	0.8
Q4004		
E	1.1	1.2
C	0	0
B	0.5	0.6

<IRIS & AF/ZOOM>

MODE PIN NO.	REC	PLAY
IC4201		
1	1.5	0
2	1.6	0
3	1.5	1.5
4	0	0
5	1.9	1.9
6	1.9	1.9
7	1.9	1.9
8	4.8	4.8
IC4202		
1	0	0
2	0	3.2
3	1.6	0
4	4.8	4.8
5	1.9	1.6
6	1.9	2
7	1.6	3.5
8	2.5	0
9	1.9	1.9
10	2.5	0
11	0	0
12	0	0
13	0	0
14	0.9	1.6
IC4251		
1	2	2
2	2	2
3	2	2
4	0	0
5	2	2
6	2	2
7	1.7	1.7
8	4.8	4.8
IC4501		
1	0	0
2	0.8	0.8
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	3.2	3.2
9	4.8	4.8
10	1.7	2.2
11	0	0
12	1.6	2.2
13	4.8	4.8
14	1.3	0.8
15	0	0
16	2.2	3.6
17	0	0
18	0	0
19	0	0
20	0	0
21	0	0
22	0	0
23	4.8	4.8
24	1.6	2.3
25	0	0
26	1.6	2.3
27	4.8	4.8
28	1.6	2.3
29	0	0
30	1.5	2.3
31	0	0
32	0	0
33	0	0
34	0	0.7
35	3.1	3.2
36	1.6	1.6
37	1.5	1.5
38	3.2	3.2
Q4201		
E	0	0
C	1.4	0
B	1	1

MODE PIN NO.	REC	PLAY
Q4251		
E	0	0
C	4.8	4.8
B	-	-
Q4501		
E	0	0
C	4.8	1.1
B	0	0

<REG>

MODE PIN NO.	REC	PLAY
IC6001		
1	2	2.2
2	1.2	1.2
3	2.2	2.2
4	0	0
5	6.7	6.8
6	1	1
7	2.5	1.2
8	2.2	2.2
9	0	0
10	0	0
11	1	1
12	1	1
13	1	1
14	0.7	0.7
15	0	0
16	0	0
17	0.7	0.7
18	1	1
19	1.1	1
20	1	1
21	1	0.9
22	0.9	1
23	1	1
24	1	1
25	1	0.9
26	0.9	0.9
27	0	0
28	0.9	1
29	0	0
30	2.4	2.4
31	0.7	0.8
32	0.7	0.7
33	6.7	6.7
34	6.8	6.8
35	3.2	3.2
36	3.2	3.2
37	0	0
38	2.7	2.7
39	3.4	3.5
40	3	3
41	0	0
42	1.8	1.8
43	1.3	1.4
44	4.6	4.6
45	4.6	4.6
46	2.8	2.8
47	0	0
48	2.2	2.2
Q6111		
G	3.4	3.5
D	3.2	3.2
S	6.8	6.8
Q6121		
G	1.8	1.8
D	4.9	4.9
S	6.8	6.8
Q6123		
E	4.7	4.8
C	4.7	4.7
B	4.1	4.1
Q6124		
E	0	0
C	0	0
B	0.7	0.7

MODE PIN NO.	REC	PLAY
Q6131		
G	2.8	2.8
D	3.9	3.9
S	6.8	6.8
Q6141		
G	4.6	4.7
D	2	2
S	6.7	6.8
Q6151		
G	4.6	4.6
D	2	2
S	6.7	6.7
Q6161		
G	2.8	2.8
G	0	0
S	0	0
Q6162		
1	4.3	4.3
2	5	5.2
3	15.2	15.2
4	4.3	4.3
5	4.8	4.8
6	15.8	15.8
Q6163		
E	15.8	18.5
C	12.2	12.3
B	15.2	15.2
Q6164		
E	15.1	15.1
C	15.8	15.8
B	15.8	15.8
Q6165		
1	-7.5	-7.6
2	-8.1	-8.2
3	-14	-16.1
4	-7.6	-7.6
5	-8	-8.1
6	-16	-16.1
Q6166		
E	-14.6	-16.1
C	8.1	8.2
B	-14.0	-16.0
Q6167		
E	-15.1	-15.1
C	-15.8	-15.8
B	15.8	15.8
Q6168		
E	0	0
C	15.6	18.5
B	-0.9	-0.9

<CCD>

MODE PIN NO.	EE
IC5301	
1	-7.6
2	-7.6
3	0
4	0
5	0
6	9.5
7	14.9
8	0
9	0
10	10.3
11	-8.1
12	9.8
13	1.7
14	1.6
Q5301	
E	8.8
C	15
B	9.5

<MONITOR>

MODE PIN NO.	EE
IC7601	
1	1.6
2	1.6
3	1.6
4	0
5	0
6	0
7	0
8	0.7
9	3.6
10	0
11	2.4
12	2.4
13	2.4
14	2.4
15	2.4
16	2.4
17	0
18	7.2
19	0
20	0
21	0.4
22	1.5
23	1.6
24	1.6
25	3.2
26	1.4
27	1.4
28	0
29	0
30	0
31	0.5
32	0
33	2.8
34	0
35	0
36	0
37	3
38	3.1
39	0
40	0
41	0
42	3.2
43	3.2
44	3.2
45	0
46	3.2
47	0
48	1.8
IC7602	
1	3.1
2	3.1
3	3.2
4	0
5	2.1
6	3.1
7	3.1
8	3.2
IC7603	
1	5.9
2	5.9
3	5.9
4	0
5	3.1
6	3.2
7	0
8	12.1
Q7501	
E	0
C	4.6
B	0
Q7502	
E	0
C	4.6
B	0
Q7503	
E	4.7
C	4.6
B	0

MODE PIN NO.	EE
Q7504	
E	0
C	0
B	0.6
Q7505	
E	0
C	0
B	0
Q7506	
E	0
C	0.6
B	0
Q7608	
E	-
C	-
B	-
Q7609	
E	-
C	-
B	-

<B/W VF>

MODE PIN NO.	EE
IC7001	
1	2.1
2	4.9
3	2.0
4	0
5	2.1
6	1.3
7	2.0
8	6
9	4.2
10	0
11	1.9
12	4.5
13	2.8
14	1.7
15	1.8
16	1.6
Q7001	
E	0
C	4.4
B	0.5
Q7002	
E	2.8
C	-24.6
B	2.3
Q7003	
E	-24.0
C	-34.3
B	-24.6

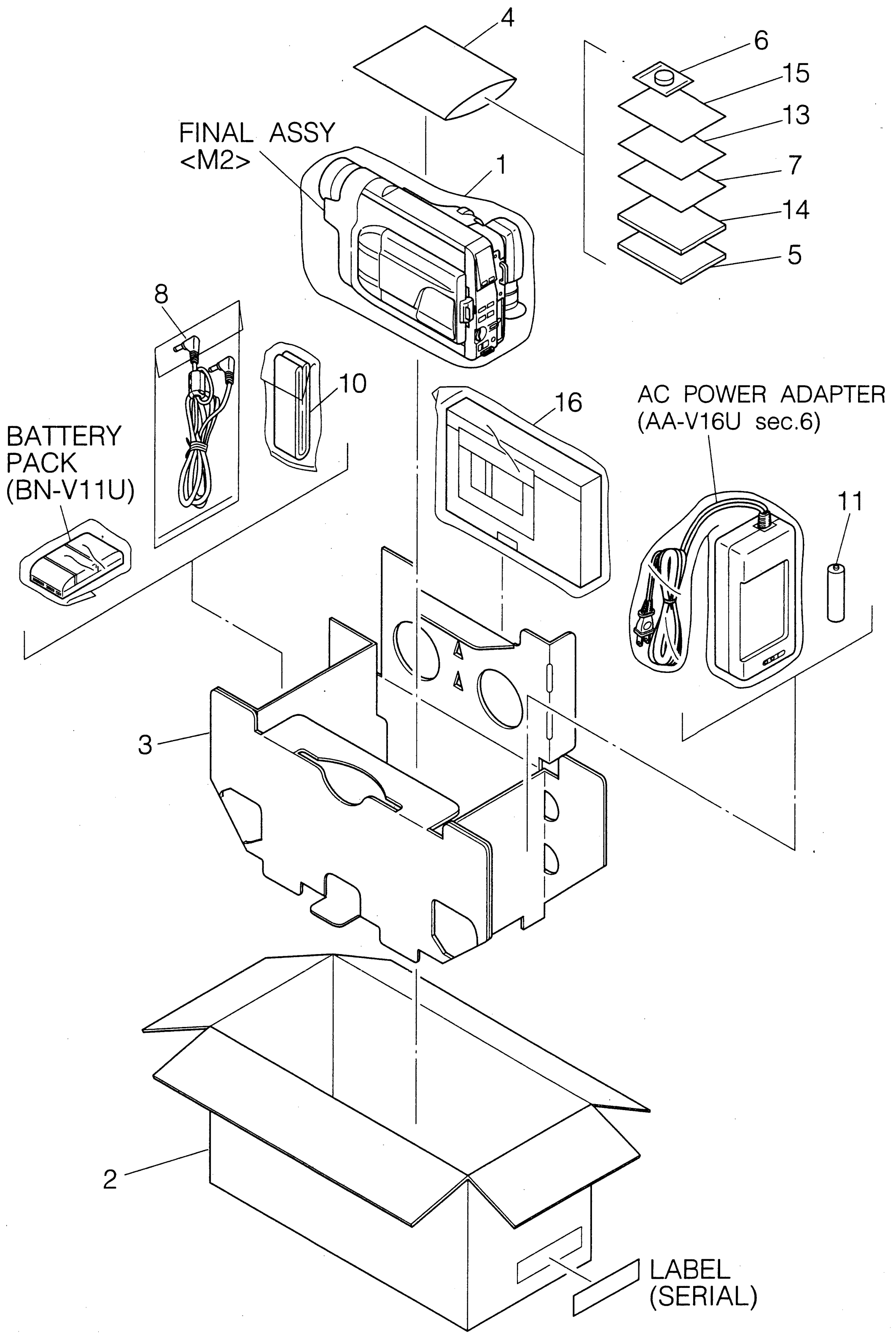
SECTION 5
PARTS LIST

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

5.1 PACKING ASSEMBLY <M1>

The instruction manual to be provided with this product will differ according to the destination.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6
15
13
7
14
5
FINAL ASSY
<M2>
1
8
10
16
AC POWER ADAPTER
(AA-V16U sec.6)
BATTERY
PACK
(BN-V11U)
11
3
2
LABEL
(SERIAL)

****

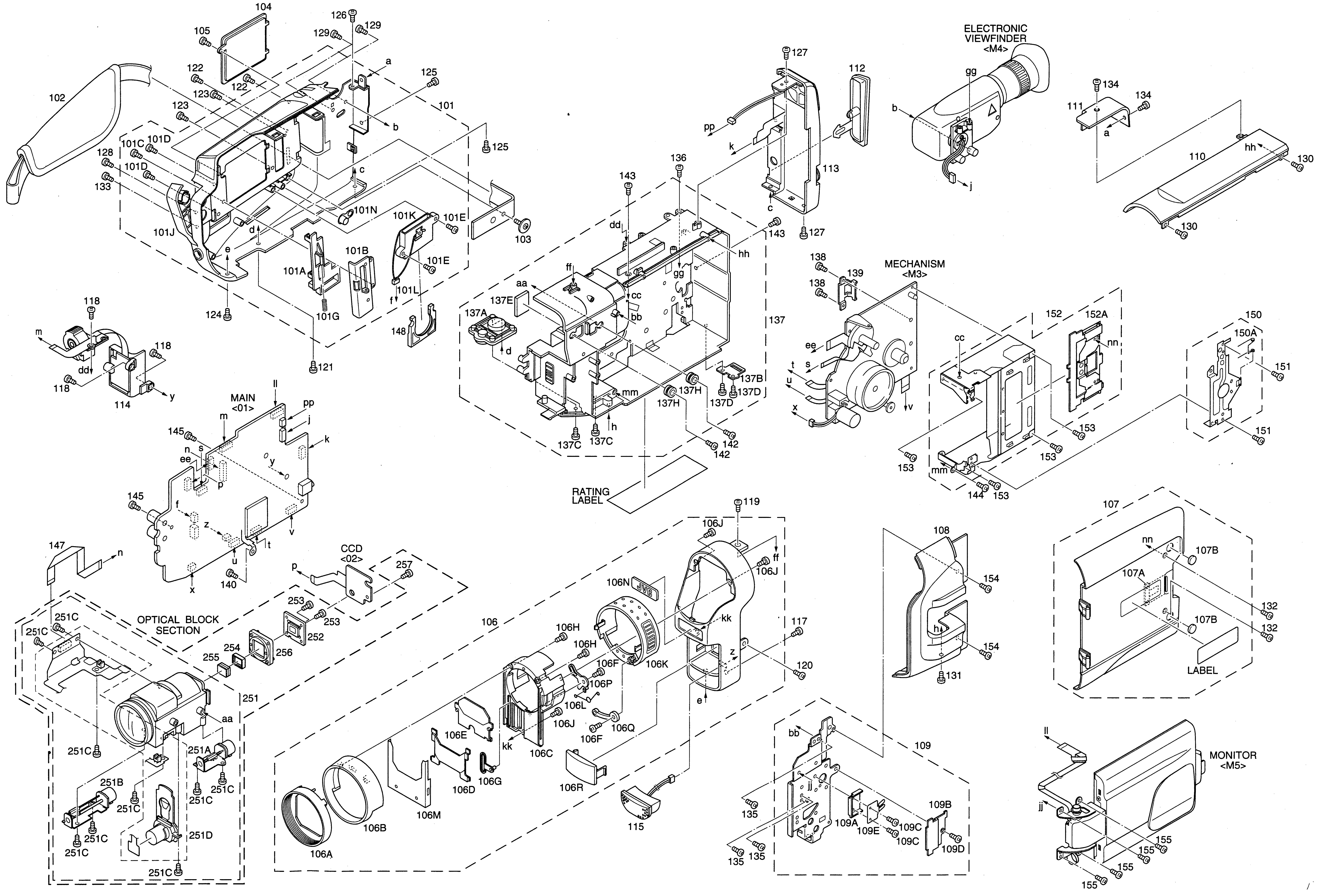
PACKING ASSEMBLY <M1>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION
	1	LY30023-002A	POLY BAG
	2	LY31561-007A	PACKING CASE,U
		LY31561-008A	PACKING CASE,UC
	3	LY31563-001A	CUSHION
	4	QPA02003006	POLY BAG
⚠	5	LYT0478-001A	IB(EN)
⚠	6	PECA0903	LI BATTERY
	7	BT-51020-2	REGIST.CARD,U
	8	QAM0170-001	DC CORD
	10	LY20186-001A	SHOULDER STRAP
	11	–	BATTERY,CASS.ADAPTER, R6(AA)
	13	BT-52004-1	WARRANTY CARD,UC
⚠	14	LYT0478-002A	IB(FR),UC
	15	BT-20071B	SER.NET CARD,UC
	16	YQ31963A-3	CASS.ADAPTER ASSY
		or YQ31963B-3	CASS.ADAPTER ASSY

- **INSTRUCTIONS**

EN .... ENGLISH
FR .... FRENCH

5.2 FINAL ASSEMBLY <M2>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105
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129
a
122
122
123
123
102
125
101
b
101C
101D
128
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133
c
101N
101K
101E
101J
d
e
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101B
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103
125
f
101L
101G
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148
121
118
m
118
dd
118
114
y
MAIN
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257
OPTICAL BLOCK
SECTION
251C
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251A
251B
251C
251C
251C
251D
251C
251C
251C
127
112
pp
k
113
c
127
136
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dd
143
hh
gg
ff
aa
cc
137E
137A
bb
d
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mm
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137H
137B
137D
137D
h
137C
137C
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LABEL
ELECTRONIC
VIEWFINDER
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134
111
a
110
hh
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MECHANISM
<M3>
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t
u
x
v
cc
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152A
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nn
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mm
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106J
ff
106J
106N
JVC
kk
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106
106H
106H
z
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106F
106P
106K
106L
106J
106Q
106F
106E
kk
106C
106G
106D
106R
106M
106B
106A
115
e
108
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154
h
131
107
nn
107B
107A
132
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107B
LABEL
109
bb
jj
109B
135
109A
109E
109C
109C
109D
135
135
ll
MONITOR
<M5>
jj
155
155
155
155

* * *

FINAL ASSEMBLY <M2>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
⚠ 101	LY10122-033A	LOWER CASE ASSY
101A	LY30885-001C	KNOB(B.RELEASE)
101B	LY30886-001B	BKT(B.RELEASE)
101C	QYSLSP2030D	SCREW
101D	QYSLSP2050D	SCREW,X2
101E	QYSLSF2055D	SPECIAL SCREW,X2
101G	LY30002-026A	COMPRES. SPRING
101J	LY30891-001B	CAP(RCA JACK)
101K	LY30888-001B	HOLDER(LITHIUM)
101L	WJM0119-001A	E-SI C WIRE C-F
101N	LY40081-001A	CAP
102	LY20014-001A	GRIP BELT
103	LY30018-003A	SPECIAL SCREW
⚠ 104	LY30887-001B	CAP(JIG)
105	QYSLSP2030D	SCREW
106	LY10124-041A	FRONT COVER ASSY
106A	LY30893-001C	HOOD
106B	LY31556-001A	COVER(HOOD)
106C	LY20349-001C	GUIDE(SHUTTER)
106D	LY30895-001B	SHUTTER(1)
106E	LY30896-001A	SHUTTER(2)
106F	YQ43762	SPECIAL SCREW,X2
106G	LY41075-001A	SLIDER(SHUTTER)ASSY
106H	QYSLSF2050Z	SCREW,X2
106J	QYSLSF2060Z	SCREW,X3
106K	LY20348-001A	DIAL(SHUTTER)
106L	LY41081-001D	TORSION SPRING
106M	LY41128-001B	HOLD(SHUTTER)
106N	LY41381-001A	MARK
106P	LY41077-001A	LEVER(1)
106Q	LY41078-001A	LEVER(2)
106R	LY30934-001A	COVER(LIGHT)
107	LY10131-019A	CASS.COVER(M)ASSY
107A	LY30907-001A	BUTTON(PUSH)
107B	LY40076-002A	SPACER,X2
108	LY10133-001C	UPPER CASE(M)
109	LY30908-001C	BKT(UPPER)ASSY
109A	LY30909-001A	BKT(STOPPER)
109B	LY30910-001B	COVER(STOPPER)
109C	QYSLSP2030D	SCREW,X2
109D	QYSLSP2025D	SCREW
109E	LY41384-001A	EARTH PLATE(B)
110	LY10129-074A	TOP COVER
111	LY20328-001E	COVER(VF)
112	LY30892-001B	CAP(REAR JACK)
113	LY10120-035A	OPERATION UNIT
114	LY10121-001D	ZOOM UNIT
115	LY30861-010A	MICROPHONE
117	QYSLSF2055D	SPECIAL SCREW
118	QYSLSF2055D	SPECIAL SCREW,X3
119	YQ43762-5	SPECIAL SCREW
120	QYSLSF2055D	SPECIAL SCREW
121	QYSLSF2055D	SPECIAL SCREW
122	QYSLSF2055D	SPECIAL SCREW,X2
123	QYSLSF2055D	SPECIAL SCREW,X2
124	QYSLSF2090D	SCREW
125	QYSLSF2055D	SPECIAL SCREW,X2
126	QYSLSF2055D	SPECIAL SCREW
127	QYSLSF2055D	SPECIAL SCREW,X2
128	QYSLSF2090D	SCREW
129	QYSLSF2055D	SPECIAL SCREW,X2
130	QYSLSF2055D	SPECIAL SCREW,X2
131	QYSLSF2055D	SPECIAL SCREW
132	QYSLSP2030D	SCREW,X2
133	QYSLSF2090D	SCREW
134	QYSLSF2055D	SPECIAL SCREW,X2
135	QYSLSF2055D	SPECIAL SCREW,X3
136	QYSLSF2055D	SPECIAL SCREW
⚠ 137	LY20372-002B	FRAME ASSY
137A	LY30903-001A	BASE
137B	LY41090-001B	HOOK
137C	QYSLSF2060D	SCREW,X2
137D	QYSLSF2060Z	SCREW,X2
137E	LY30016-0H2A	SPACER-A
137H	LY41082-001A	CUSHION(OP),X2
138	YQ44457-3	SCREW,X2
139	LY30904-001A	BKT(MECHA)
140	QYSPSTU1725M	SCREW
142	LY30018-050A	SPECIAL SCREW,X2
143	LY41173-001A	SPECIAL SCREW,X2
144	QYSLSF1750D	SCREW
145	QYSLSF2055D	SPECIAL SCREW,X2
147	WJT0024-001A	E-CARD WIRE,OP-MAIN CN15
148	LY30889-001B	CAP(LITHIUM)
150	LY30514-001F	FRONT FRAME ASSY
150A	YQ44144-1-1	TAPE GUIDE
151	SPSH1725M	SCREW,X2
152	YQ31752H-29	CASSETTE HOUSING ASSY
152A	LY30175-001C	C.COV.INS.ASSY
153	YQ44457-3	SCREW,X4
154	QYSLSP2025D	SCREW,X2
155	QYSLSP2030D	SCREW,X4

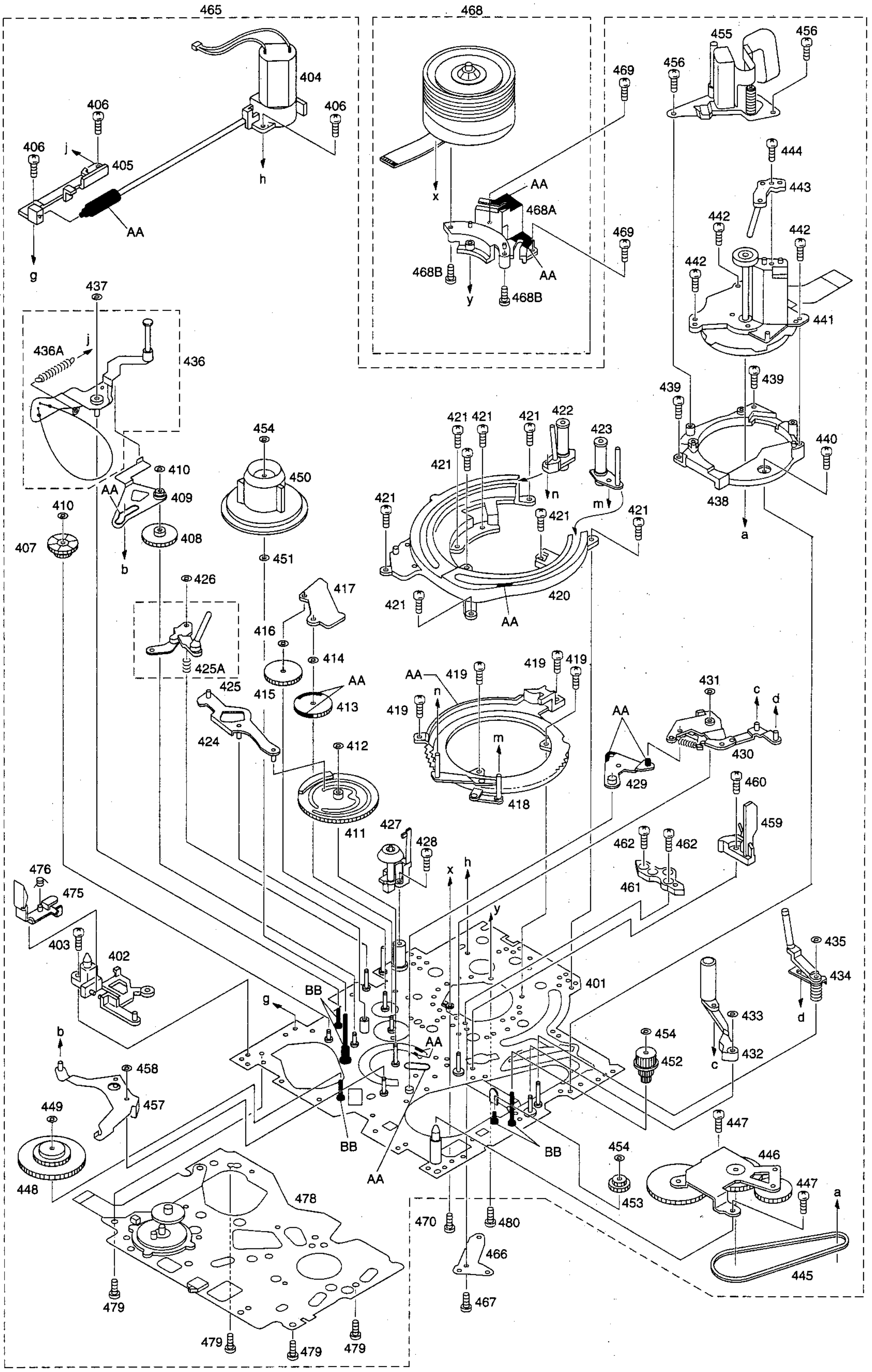
– OPTICAL BLOCK SECTION –

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
251	LY30948-003A	OP BLOCK ASSY
251A	PTY30948-002	FOCUS MOTOR
251B	PTY30948-301	ZOOM MOTOR
251C	PTY30151-016	SCREW,X9
251D	PTY30948-006	IRIS MOTOR UNIT,INCL.FPC
252	LYH40047-001A	CCD BASE ASSY
253	QYSPSGU2080Z	SCREW,X2
254	LY31441-001A	SPACER RUBBER
255	LY41755-001A	OPTICAL LPF
256	LY20346-001A	CCD SPACER
257	LY30018-072A	SPECIAL SCREW

5.3 MECHANISM ASSEMBLY <M3>

BEWARE OF BOGUS PARTS

Parts that do not meet specifications may cause trouble in regard to safety and performance. We recommend that genuine JVC parts be used.



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Classifi-cation	Part No.	Symbol in drawing
Grease	KYODO-SH-P	AA
Oil	YTU94027	BB

NOTE: The section marked in AA and BB indicate lubrication and greasing areas.

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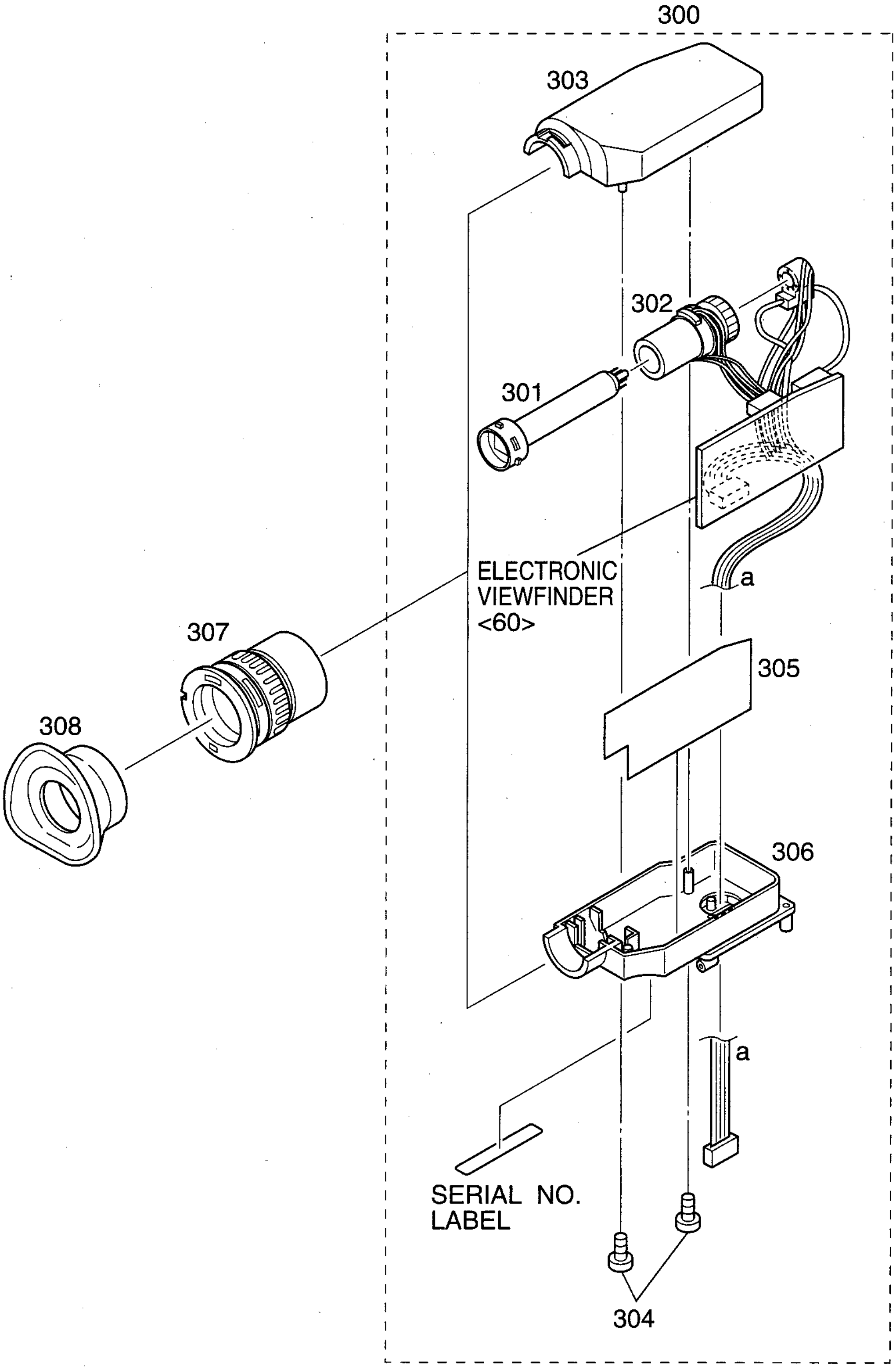
MECHANISM ASSEMBLY <M3>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
401	LY20182-001D	MAIN DECK ASSY
402	YQ32218	C.GUIDE(L)
403	YQ44457	SCREW
404	YQ31856A-3	MOTOR BRACKET ASSY
405	YQ20793	WORM BRACKET
406	YQ44457	SCREW,X3
407	YQ31783	WHEEL GEAR
408	YQ44328	MIDDLE GEAR
409	YQ43849B	CANCEL LEVER ASSY
410	PQM30017-27	SLIT WASHER,X2
411	YQ20827-2-1	CONTROL CAM
412	PQM30017-25	SLIT WASHER
413	YQ43853A	LOADING GEAR(T)ASSY
414	PQM30017-27	SLIT WASHER
415	YQ43852A	LOADING GEAR(S)ASSY
416	PQM30017-27	SLIT WASHER
417	YQ43634	COVER PLATE
418	YQ43635C-12	LOADING RING ASSY
419	YQ44457	SCREW,X4
420	YQ10516-1-11	GUIDE RAIL
421	YQ44457-5	SCREW,X8
422	YQ43646A-4	SUPPLY POLE BASE ASSY
423	YQ43654A-11	TAKE-UP POLE BASE ASSY
424	YQ44439A-2	DRIVE LEVER ASSY
425	YQ43663C-7	SLANT ARM ASSY
425A	YQ43670	TOR.SPRING(S)
426	PQM30017-27	SLIT WASHER
427	YQ44436A-3	ROLLER BASE ASSY
428	YQ44457	SCREW
429	YQ32230	LINK LEVER
430	YQ43682B-9	LINK ARM ASSY
431	PQM30017-25	SLIT WASHER
432	LY40018-001A	PINCH ROLLER ARM ASSY
433	PQM30017-25	SLIT WASHER
434	YQ44591A	TAKE-UP GUIDE ARM ASSY
435	PQM30017-27	SLIT WASHER
436	YQ44199C-9	TENSION ARM ASSY
436A	LY41515-001A	TENSION SPRING
437	PQM30017-27	SLIT WASHER
438	YQ20797-1-5	MOTOR BASE
439	YQ44457	SCREW,X2
440	YQ44460	SCREW
441	YU42078-2	CAPSTAN MOTOR
442	YQ44304	TAPPING SCREW,X3
443	YQ43708A-3	SLANT POLE BASE ASSY
444	YQ44304	TAPPING SCREW
445	YQ43710	TIMING BELT
446	YQ43711B-10	CENTER PULLEY UNIT
447	YQ44457-2	SCREW,X2
448	YQ43729A-3	SUPPLY CLUCH ASSY
449	PQM30017-27	SLIT WASHER
450	YQ31861-1-7	REEL DISC
451	Q03093-835	WASHER
452	YQ31787	TAKE-UP GEAR
453	YQ43737	BRAKE SUB GEAR
454	PQM30017-27	SLIT WASHER,X3
455	YQ43738D-22	A/C HEAD UNIT
456	SPSN1750Z	SCREW,X2
457	YQ43743B	EJECT LEVER ASSY
458	PQM30017-27	SLIT WASHER
459	YQ31833-1-1	LED GUIDE
460	YQ44457	SCREW
461	YQ43818	DRUM SPACER
462	YQ44457	SCREW,X2
465	YMA0027A	MECHA(A) ASS'Y
466	YU42051	BRUSH
467	YQ44457-3	SCREW
468	YDV2090A	DRUM ASSY
468A	YDM1003-1-5	CATCHER
468B	QYSPSPU1735M	SCREW,X2
469	YQ44457	SCREW,X2
470	SPSH1740Z	SCREW
475	YQ32219	SW.LEVER(L)
476	YQ44422-1-1	TORSION SPRING
478	QSW0745-001	ROTARY ENCODER
479	YQ44457-2	SCREW,X4
480	SPSH1740Z	SCREW

5.4 ELECTRONIC VIEWFINDER ASSEMBLY <M4>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ELECTRONIC VIEWFINDER <60>
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SERIAL NO. LABEL
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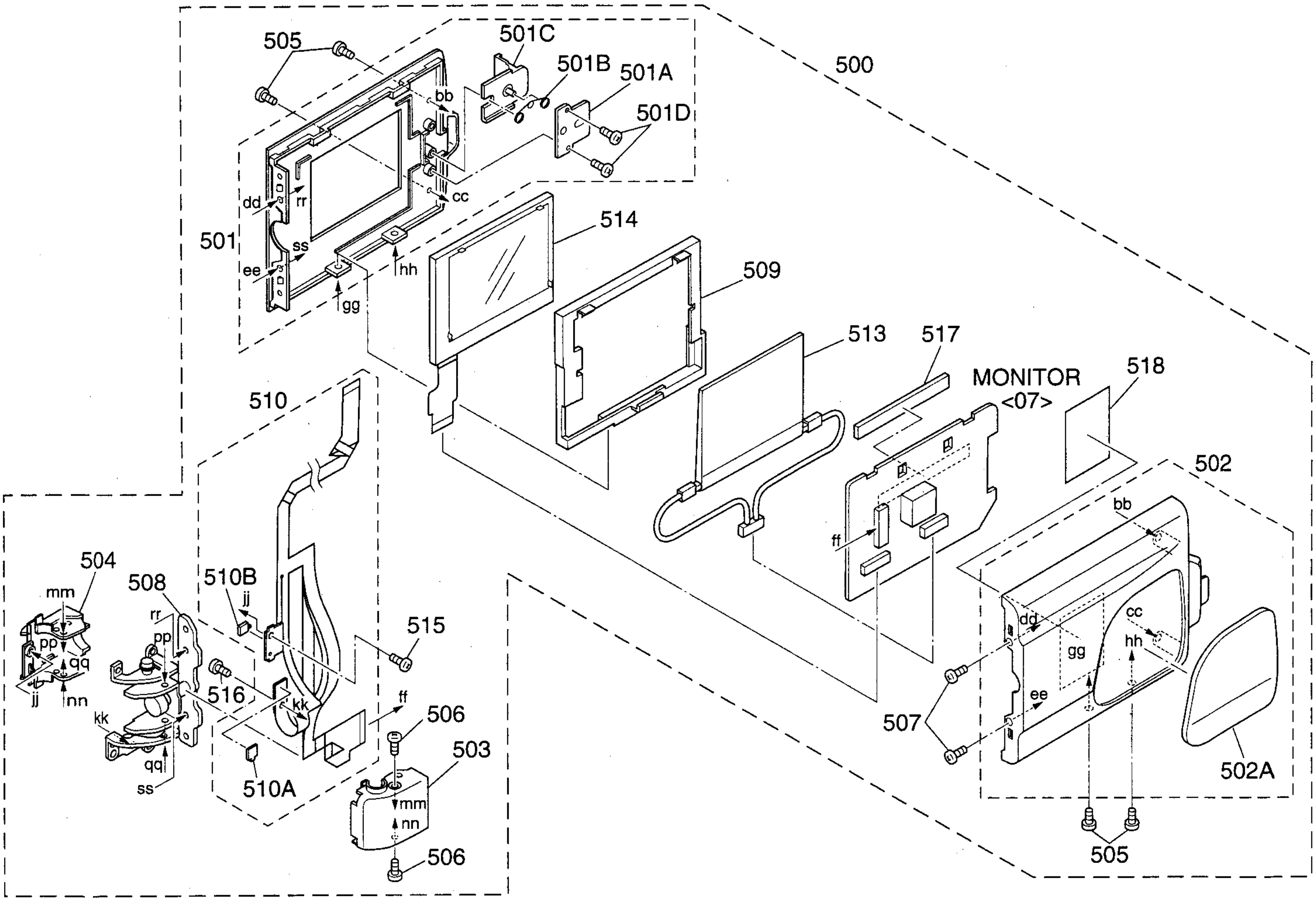
# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻		
ELECTRONIC VIEWFINDER ASSEMBLY <M4>		
⚠ 300	LY20374-003A	E.VF ASSY
⚠ 301	PEDP0193	CRT
⚠ 302	QQD0026-001	DEFLECTION YOKE
⚠ 303	LY10165-001B	CASE(L)
304	QYSPSGU1760M	SCREW,X2
⚠ 305	LY41280-001A	SHEET(SHIELD)
⚠ 306	PTY20374-011	BOTTOM CASE ASSY
307	PTY20374-201	LENS ASSY
308	LY20411-001A	EYE CAP

5.5 MONITOR ASSEMBLY <M5>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MONITOR ASSEMBLY <M5>

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION
⚠ 500	LYH20126-004A	MONITOR ASSY
⚠ 501	LY20331-001C	UPPER CASE(MONI)ASSY
501A	LY41095-001B	BKT(LOCK)
501B	LY41096-001B	T.SPRING
501C	LY30913-001C	BUTTON(LOCK)
501D	QYSLSF2035D	SCREW,X2
⚠ 502	LY20482-004A	COVER(MONI) ASSY
502A	LY31295-004A	WINDOW
503	LY20333-006A	COVER(U.HINGE)
504	LY20334-001B	COVER(L.HINGE)
505	LY30018-011A	SPECIAL SCREW,X4
506	QYSLSP2030D	SCREW,X2
507	LY30018-051A	SPECIAL SCREW,X2
508	LY20310-001B	T.HINGE ASSY
509	LY20335-001A	HOLDER(MONI)
510	LY42087-001A	MONI.FPC ASSY
510A	NSW0094-001X	DETECT SWITCH
510B	NSW0007-001X	PUSH SWITCH
513	QLL0054-003	BACK LIGHT
514	QLD0082-001	LCD MODULE
515	QYSLSF2030D	SCREW
516	QYSLSP2030D	SCREW
517	LY30016-0H1A	SPACER-A
518	LY40559-001A	SHIELD SHEET

5.6 ELECTRICAL PARTS LIST

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MAIN BOARD ASSEMBLY <01>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YB10271UL-02	MAIN BOARD ASSY	
	IC101	UPD703039-011	IC(MICRO C ROM)	
		or UPD70F3040-011	IC(MICRO C ROM)	
	IC102	S-81332HG-KC-X	IC	
	IC104	AT25080N-10SC-X	IC	
	IC105	M62367GP	IC	
	IC106	IC-PST9327U-X	IC	
	IC107	RS5C314	IC	
	IC1201	BA8400FV	IC	
⚠	IC1601	BA6866KV	IC	
	IC2001	TC74AC04FT	IC(DIGITAL)	
	IC2401	NJM2073M-XE	IC	
	IC3001	JCY0130	IC	
	IC3002	74HC1G04GW	IC	
	IC3101	HA118219F	IC	
	IC3501	M52385FP	IC	
	IC3901	TC7WHU04FU	IC	
	IC4001	JCY0100	IC	
	IC4003	UPD6462GS-914-X	IC	
	IC4004	MM1385NN	IC	
	IC4005	TC7S04FU	IC	
	IC4201	UPC358G2/5/-W	IC	
	IC4202	BA10324AFV-XE	IC	
	IC4251	BA10358F-XE	IC	
	IC4501	UPD16835G3	IC	
	IC5201	HD49326F	IC	
	IC5202	JCY0098	IC	
	IC6001	FA3676F	IC	
	Q101	2SA1774/RS/-X	TRANSISTOR	
	Q102	DTC144EE	TRANSISTOR	
	Q103	2SC4617/QR/-X	TRANSISTOR	
	Q104	DTC144EE	TRANSISTOR	
	Q105	2SA1774/RS/-X	TRANSISTOR	
	Q106	DTC144EE	TRANSISTOR	
	Q107	DTA144EE	TRANSISTOR	
	Q110	DTC144EE	TRANSISTOR	
	Q2001	DTA144EE	TRANSISTOR	
	Q2006	DTC144EE	TRANSISTOR	
	Q2007	PUMX1	PAIR TRANSISTOR	
	Q2008	PUMT1	PAIR TRANSISTOR	
	Q2071	2SC4617/QR/-X	TRANSISTOR	
	Q2072	PUMX1	PAIR TRANSISTOR	
	Q3002	HN1C01FU/G/-X	PAIR TRANSISTOR	
		or PUMX1	PAIR TRANSISTOR	
	Q3003	2SA1577/QR/-X	TRANSISTOR	
	Q3004	DTC144EE	TRANSISTOR	
	Q3103	HN1C01FU/G/-X	PAIR TRANSISTOR	
		or PUMX1	PAIR TRANSISTOR	
	Q3104	HN1A01FU/G/-X	PAIR TRANSISTOR	
		or PUMT1	PAIR TRANSISTOR	
	Q3501	HN1C01FU/G/-X	PAIR TRANSISTOR	
	Q3502	HN1C01FU/G/-X	PAIR TRANSISTOR	
	Q3506	DTC144EE	TRANSISTOR	
	Q3901	DTA114EE	TRANSISTOR	
	Q3902	DTC144EE	TRANSISTOR	
	Q3903	2SC4617/QR/-X	TRANSISTOR	
	Q3904	DTC144EE	TRANSISTOR	
	Q4001	PUMT1	PAIR TRANSISTOR	
	Q4002	PUMT1	PAIR TRANSISTOR	
	Q4004	2PA1774/R/-X	TRANSISTOR	
	Q4201	2SC4617/QRS/-X	TRANSISTOR	
		or 2SC4738/YG/-X	TRANSISTOR	
	Q4251	RPM-22PB	PHOTO TRANSISTOR	
	Q4501	DTC114EE	TRANSISTOR	
	Q6111	NDS352AP	MOS FET	
	Q6121	NDS352AP	MOS FET	
	Q6123	2SB1121/ST/-X	TRANSISTOR	
	Q6124	2SC4617/QR/-X	TRANSISTOR	
		or 2SC4738/YG/-X	TRANSISTOR	
	Q6131	NDS352AP	MOS FET	
	Q6141	NDS352AP	MOS FET	
	Q6151	NDS352AP	MOS FET	
	Q6161	NDS352AP	MOS FET	
	Q6162	HN1C01FU/G/-X	PAIR TRANSISTOR	
	Q6163	2SA1577/QR/-X	TRANSISTOR	
	Q6164	2SC4617/QR/-X	TRANSISTOR	
		or 2SC4738/YG/-X	TRANSISTOR	
	Q6165	HN1A01FU/G/-X	PAIR TRANSISTOR	
	Q6166	2SC4617/QR/-X	TRANSISTOR	
		or 2SC4738/YG/-X	TRANSISTOR	
	Q6167	2SA1774/QR/-X	TRANSISTOR	
		or 2SA1832/YG/-X	TRANSISTOR	
	Q6168	DTC144EE	TRANSISTOR	
		or RN1104	TRANSISTOR	
⚠	D101	SB007W03Q	SB DIODE	
	D102	UDZS7.5B	ZENER DIODE	
	D105	1SS355	DIODE	
	D106	1SS355	DIODE	
	D107	SB007W03Q	SB DIODE	
	D501	MA8068	ZENER DIODE	
	D502	MA8068	ZENER DIODE	
	D3001	DAN222	DIODE	
	D3102	MA8068	ZENER DIODE	
	D5202	1SS355	DIODE	
	D6111	CRS06	SB DIODE	
	D6121	CRS06	SB DIODE	
	D6131	CRS06	SB DIODE	
	D6141	CRS06	SB DIODE	
	D6151	CRS06	SB DIODE	
	D6152	CRS06	SB DIODE	
	D6161	1SS357	SB DIODE	
	D6162	1SS357	SB DIODE	
	D6163	1SS357	SB DIODE	
	D6164	1SS357	SB DIODE	
	D6165	MA8091/L/-X	ZENER DIODE	
	R101	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
⚠	R104	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R105	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R106	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
	R107	NRVA63D-153X	CMF RESISTOR	15kΩ,1/16W
	R108	NRVA63D-243X	CMF RESISTOR	24kΩ,1/16W
	R109	NRVA63D-183X	CMF RESISTOR	18kΩ,1/16W
	R110	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R111	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
	R112	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
	R113	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
	R114	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
	R115	NRSA63J-101X	MG RESISTOR	100Ω,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R116	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R118	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R119	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R120	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R121	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R122	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
R123	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R124	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R125	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R126	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R127	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R128	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R129	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R130	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R131	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R132	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R133	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R134	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R135	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R136	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R137	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R138	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R139	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R140	NRSA63J-124X	MG RESISTOR	120kΩ,1/16W
R141	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R142	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R143	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R144	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R145	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R146	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R147	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R148	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R150	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R152	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R153	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R154	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R155	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R156	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R157	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R158	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R159	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R160	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R161	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R162	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R164	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R166	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R167	NRSA63J-183X	MG RESISTOR	18kΩ,1/16W
R168	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
R170	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R171	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R501	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R504	NRSA63J-221X	MG RESISTOR	220Ω,1/16W
R505	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
R1201	NRSA63J-824X	MG RESISTOR	820kΩ,1/16W
R1202	NRSA63J-821X	MG RESISTOR	820Ω,1/16W
R1203	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
R1204	NRSA63J-274X	MG RESISTOR	270kΩ,1/16W
R1601	NRV142F-R33X	CMF RESISTOR	0.33Ω,1/4W
R1602	NRV142F-R33X	CMF RESISTOR	0.33Ω,1/4W
R1603	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R1604	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R1605	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1606	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1607	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1608	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R1609	NRSA63J-184X	MG RESISTOR	180kΩ,1/16W
R1610	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1612	NRVA63D-332X	CMF RESISTOR	3.3kΩ,1/16W
R1613	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R1614	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
R1615	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R1617	NRVA63D-392X	CMF RESISTOR	3.9kΩ,1/16W
R1618	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
R1619	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R1620	NRSA63J-684X	MG RESISTOR	680kΩ,1/16W
R1621	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1622	NRSA63J-224X	MG RESISTOR	220kΩ,1/16W
R1623	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R1628	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1629	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1630	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R1631	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R1632	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R1633	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
R2001	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R2002	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R2003	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2004	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R2005	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R2006	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2011	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R2012	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
R2016	NRVA63D-133X	CMF RESISTOR	13kΩ,1/16W
R2021	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2022	NRSA63J-334X	MG RESISTOR	330kΩ,1/16W
R2023	NRSA63J-151X	MG RESISTOR	150Ω,1/16W
R2024	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R2025	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R2026	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2027	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R2029	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R2071	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R2072	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R2073	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R2074	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R2075	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R2076	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R2401	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
R2402	NRSA63J-122X	MG RESISTOR	1.2kΩ,1/16W
R2403	NRSA63J-2R2X	MG RESISTOR	2.2Ω,1/16W
R2404	NRSA63J-2R2X	MG RESISTOR	2.2Ω,1/16W
R3001	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
R3002	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
R3004	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R3006	NRSA63J-471X	MG RESISTOR	470Ω,1/16W
R3007	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
R3008	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
R3009	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R3010	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R3014	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
R3015	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R3016	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R3018	NRSA63J-271X	MG RESISTOR	270Ω,1/16W
		R3023	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
		R3024	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
		R3026	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
		R3027	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
		R3028	NRVA63D-472X	CMF RESISTOR	4.7kΩ,1/16W
		R3029	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R3030	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
		R3032	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R3034	NRSA63J-220X	MG RESISTOR	22Ω,1/16W
		R3101	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
		R3102	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
		R3103	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
		R3112	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
		R3113	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
		R3114	NRSA02J-750X	MG RESISTOR	75Ω,1/10W
		R3131	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R3134	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R3135	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R3501	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
		R3503	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
		R3504	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
		R3506	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
		R3508	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
		R3509	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
		R3515	NRSA63J-243X	MG RESISTOR	24kΩ,1/16W
		R3519	NRSA63J-681X	MG RESISTOR	680Ω,1/16W
		R3536	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
		R3537	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R3540	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R3901	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
		R3902	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
		R4001	NRSA63J-113X	MG RESISTOR	11kΩ,1/16W
		R4002	NRSA63J-123X	MG RESISTOR	12kΩ,1/16W
		R4003	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
		R4004	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
		R4006	NRVA63D-272X	CMF RESISTOR	2.7kΩ,1/16W
		R4007	NRVA63D-272X	CMF RESISTOR	2.7kΩ,1/16W
		R4008	NRVA63D-272X	CMF RESISTOR	2.7kΩ,1/16W
		R4009	NRVA63D-152X	CMF RESISTOR	1.5kΩ,1/16W
		R4010	NRVA63D-122X	CMF RESISTOR	1.2kΩ,1/16W
		R4011	NRVA63D-152X	CMF RESISTOR	1.5kΩ,1/16W
		R4012	NRVA63D-122X	CMF RESISTOR	1.2kΩ,1/16W
		R4013	NRVA63D-152X	CMF RESISTOR	1.5kΩ,1/16W
		R4014	NRVA63D-122X	CMF RESISTOR	1.2kΩ,1/16W
		R4015	NRVA63D-181X	CMF RESISTOR	180Ω,1/16W
		R4016	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
		R4017	NRVA63D-151X	CMF RESISTOR	150Ω,1/16W
		R4018	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
		R4019	NRVA63D-620X	CMF RESISTOR	62Ω,1/16W
		R4020	NRVA63D-101X	CMF RESISTOR	100Ω,1/16W
		R4021	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
		R4022	NRVA63D-750X	CMF RESISTOR	75Ω,1/16W
		R4023	NRVA63D-750X	CMF RESISTOR	75Ω,1/16W
		R4024	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
		R4025	NRVA63D-221X	CMF RESISTOR	220Ω,1/16W
		R4026	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R4027	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
		R4029	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R4035	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R4037	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W

#	⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
		R4201	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
		R4202	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
		R4203	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
		R4204	NRSA63J-331X	MG RESISTOR	330Ω,1/16W
		R4205	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
		R4206	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
		R4207	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
		R4208	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
		R4209	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
		R4210	NRSA63J-105X	MG RESISTOR	1MΩ,1/16W
		R4211	NRSA63J-243X	MG RESISTOR	24kΩ,1/16W
		R4214	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
		R4215	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
		R4216	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
		R4217	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
		R4218	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
		R4219	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
		R4220	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
		R4221	NRSA63J-334X	MG RESISTOR	330kΩ,1/16W
		R4222	NRSA63J-154X	MG RESISTOR	150kΩ,1/16W
		R4223	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
		R4224	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
		R4251	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
		R4252	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
		R4253	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
		R4254	NRSA63J-684X	MG RESISTOR	680kΩ,1/16W
		R4255	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
		R4256	NRSA63J-824X	MG RESISTOR	820kΩ,1/16W
		R4257	NRSA63J-822X	MG RESISTOR	8.2kΩ,1/16W
		R4258	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
		R4259	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
		R4262	NRSA63J-302X	MG RESISTOR	3kΩ,1/16W
	⚠	R4501	NRSA63J-6R8X	MG RESISTOR	6.8Ω,1/16W
	⚠	R4502	NRSA63J-6R8X	MG RESISTOR	6.8Ω,1/16W
	⚠	R4503	NRSA63J-6R8X	MG RESISTOR	6.8Ω,1/16W
	⚠	R4504	NRSA63J-6R8X	MG RESISTOR	6.8Ω,1/16W
		R4505	NRSA63J-271X	MG RESISTOR	270Ω,1/16W
		R4506	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
		R4507	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
		R4513	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R4514	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
		R4515	NRSA63J-182X	MG RESISTOR	1.8kΩ,1/16W
		R4518	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R5201	NRSA63J-243X	MG RESISTOR	24kΩ,1/16W
		R5202	NRSA63J-220X	MG RESISTOR	22Ω,1/16W
		R5211	NRSA63J-562X	MG RESISTOR	5.6kΩ,1/16W
		R5212	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R5213	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R5214	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R5215	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
		R5216	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
		R5218	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R5220	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
		R6001	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
		R6002	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
		R6009	NRVA63D-153X	CMF RESISTOR	15kΩ,1/16W
		R6010	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
		R6011	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
		R6012	NRSA63J-472X	MG RESISTOR	4.7kΩ,1/16W
		R6111	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
		R6112	NRVA63D-223X	CMF RESISTOR	22kΩ,1/16W

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
R6113	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6121	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
R6122	NRVA63D-183X	CMF RESISTOR	18kΩ,1/16W
R6123	NRVA63D-472X	CMF RESISTOR	4.7kΩ,1/16W
R6125	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
R6126	NRSA63J-152X	MG RESISTOR	1.5kΩ,1/16W
R6127	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R6131	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R6133	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R6134	NRVA63D-302X	CMF RESISTOR	3kΩ,1/16W
R6135	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R6136	NRSA63J-113X	MG RESISTOR	11kΩ,1/16W
R6137	NRSA63J-682X	MG RESISTOR	6.8kΩ,1/16W
R6141	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
R6142	NRSA63J-243X	MG RESISTOR	24kΩ,1/16W
R6143	NRSA63J-332X	MG RESISTOR	3.3kΩ,1/16W
R6144	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6145	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
R6146	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R6151	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
R6152	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6153	NRVA63D-103X	CMF RESISTOR	10kΩ,1/16W
R6161	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
R6162	NRVA63D-683X	CMF RESISTOR	68kΩ,1/16W
R6163	NRVA63D-392X	CMF RESISTOR	3.9kΩ,1/16W
R6164	NRSA63J-394X	MG RESISTOR	390kΩ,1/16W
R6165	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R6166	NRSA63J-273X	MG RESISTOR	27kΩ,1/16W
R6167	NRSA63J-822X	MG RESISTOR	8.2kΩ,1/16W
R6168	NRVA63D-513X	CMF RESISTOR	51kΩ,1/16W
R6169	NRVA63D-823X	CMF RESISTOR	82kΩ,1/16W
R6170	NRVA63D-473X	CMF RESISTOR	47kΩ,1/16W
R6171	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R6172	NRVA63D-823X	CMF RESISTOR	82kΩ,1/16W
R6173	NRSA63J-474X	MG RESISTOR	470kΩ,1/16W
R6174	NRVA63D-683X	CMF RESISTOR	68kΩ,1/16W
R6175	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R6176	NRSA63J-333X	MG RESISTOR	33kΩ,1/16W
R6177	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
R6178	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
R6179	NRSA63J-272X	MG RESISTOR	2.7kΩ,1/16W
R6180	NRSA63J-823X	MG RESISTOR	82kΩ,1/16W
R6181	NRSA63J-104X	MG RESISTOR	100kΩ,1/16W
R6182	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
R6902	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6914	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
R6931	NRSA63J-4R7X	MG RESISTOR	4.7Ω,1/16W
R7808	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
RA101	NRZ0038-222X	NETWORK RESISTOR	2.2kΩ
RA102	NRZ0038-222X	NETWORK RESISTOR	2.2kΩ
RA103	NRZ0038-222X	NETWORK RESISTOR	2.2kΩ
RA104	NRZ0038-222X	NETWORK RESISTOR	2.2kΩ
RA105	NRZ0038-473X	NETWORK RESISTOR	47kΩ
RA106	NRZ0037-331X	NETWORK RESISTOR	330Ω
RA107	NRZ0038-222X	NETWORK RESISTOR	2.2kΩ
RA108	NRZ0038-222X	NETWORK RESISTOR	2.2kΩ
RA109	NRZ0038-222X	NETWORK RESISTOR	2.2kΩ
C101	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C102	NEA71CM-226X	E CAPACITOR	22µF,16V
C103	NBE41AM-106X	T CAPACITOR	10µF,10V
C104	NCB31EK-103X	CAPACITOR	0.01µF,25V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C105	NCB31CK-104X	CAPACITOR	0.1µF,16V
C106	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C107	NCB31EK-103X	CAPACITOR	0.01µF,25V
C108	NBE21AM-225X	T CAPACITOR	2.2µF,10V
C109	NBE41AM-106X	T CAPACITOR	10µF,10V
C110	NDC31HJ-101X	CAPACITOR	100pF,50V
C111	NEA70JM-226X	E CAPACITOR	22µF,6.3V
C112	NEA70JM-226X	E CAPACITOR	22µF,6.3V
C113	NCB31EK-103X	CAPACITOR	0.01µF,25V
C114	NCB31EK-103X	CAPACITOR	0.01µF,25V
C116	NCB31EK-103X	CAPACITOR	0.01µF,25V
C118	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C119	NCB31EK-103X	CAPACITOR	0.01µF,25V
C120	NCB31EK-103X	CAPACITOR	0.01µF,25V
C121	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C122	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C123	NDC31HJ-100X	CAPACITOR	10pF,50V
C124	NDC31HJ-100X	CAPACITOR	10pF,50V
C125	NCB31EK-103X	CAPACITOR	0.01µF,25V
C126	NDC31HJ-120X	CAPACITOR	12pF,50V
C127	NCB31CK-333X	CAPACITOR	0.033µF,16V
C128	NCB21CK-474X	CAPACITOR	0.47µF,16V
C129	NCB31CK-333X	CAPACITOR	0.033µF,16V
C131	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C132	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C133	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C134	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C1201	NBE21AM-106X	T CAPACITOR	10µF,10V
C1202	NBE21AM-106X	T CAPACITOR	10µF,10V
C1203	NCB31EK-223X	CAPACITOR	0.022µF,25V
C1204	NCB31HK-102X	CAPACITOR	0.001µF,50V
C1205	NBE21AM-106X	T CAPACITOR	10µF,10V
C1206	NBE21AM-106X	T CAPACITOR	10µF,10V
C1207	NCB31EK-103X	CAPACITOR	0.01µF,25V
C1601	NCB31EK-103X	CAPACITOR	0.01µF,25V
C1602	NBP41CM-106X	T CAPACITOR	10µF,16V
C1603	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1604	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1605	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1606	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1607	NCB31EK-103X	CAPACITOR	0.01µF,25V
C1608	NCB31CK-104X	CAPACITOR	0.1µF,16V
C1609	NCB31HK-222X	CAPACITOR	0.0022µF,50V
C1610	NCB21CK-334X	CAPACITOR	0.33µF,16V
C1611	NBE41AM-226X	T CAPACITOR	22µF,10V
C1612	NCB31HK-681X	CAPACITOR	680pF,50V
C1613	NCB21CK-474X	CAPACITOR	0.47µF,16V
C1614	NCB31HK-152X	CAPACITOR	0.0015µF,50V
C1615	NBE21AM-106X	T CAPACITOR	10µF,10V
C1616	NCB31HK-682X	CAPACITOR	0.0068µF,50V
C1617	NBP41CM-106X	T CAPACITOR	10µF,16V
C1624	NCB31CK-223X	CAPACITOR	0.022µF,16V
C1625	NCB31CK-223X	CAPACITOR	0.022µF,16V
C1626	NCB31CK-223X	CAPACITOR	0.022µF,16V
C2001	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2002	NFV41HJ-183X	MPPS CAPACITOR	0.018µF,50V
C2003	NDC31HJ-331X	CAPACITOR	330pF,50V
C2004	NBE20JM-226X	T CAPACITOR	22µF,6.3V
C2005	NCB21CK-105X	CAPACITOR	1µF,16V
C2009	NBE40JM-226X	T CAPACITOR	22µF,6.3V
C2010	NCB31CK-104X	CAPACITOR	0.1µF,16V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C2021	NCB31HK-682X	CAPACITOR	0.0068µF,50V
C2022	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2024	NCB31HK-222X	CAPACITOR	0.0022µF,50V
C2025	NBP21EM-105X	T CAPACITOR	1µF,25V
C2026	NCB31HK-122X	CAPACITOR	0.0012µF,50V
C2027	NCB21CK-474X	CAPACITOR	0.47µF,16V
C2028	NCF21CZ-105X	CAPACITOR	1µF,16V
C2029	NCB21AK-105X	CAPACITOR	1µF,10V
C2030	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C2031	NCB21CK-104X	CAPACITOR	0.1µF,16V
C2051	NCB31HK-682X	CAPACITOR	0.0068µF,50V
C2071	NCB21AK-105X	CAPACITOR	1µF,10V
C2072	NCB31HK-682X	CAPACITOR	0.0068µF,50V
C2073	NDC31HJ-331X	CAPACITOR	330pF,50V
C2074	NCB31HK-332X	CAPACITOR	0.0033µF,50V
C2076	NCB31CK-104X	CAPACITOR	0.1µF,16V
C2401	NEA70GM-476X	E CAPACITOR	47µF,4.0V
C2402	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C2403	NCB31EK-103X	CAPACITOR	0.01µF,25V
C2404	NCF31CZ-224X	CAPACITOR	0.22µF,16V
C2405	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3002	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3003	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3004	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3005	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3006	NDC31HG-120X	CAPACITOR	12pF,50V
C3007	NDC31HG-100X	CAPACITOR	10pF,50V
C3009	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3011	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3012	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3013	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3014	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3015	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3016	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3017	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3019	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3020	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3022	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3027	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3028	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3032	NDC31HJ-100X	CAPACITOR	10pF,50V
C3033	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3037	NDC31HJ-100X	CAPACITOR	10pF,50V
C3101	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3103	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3104	NDC31HJ-560X	CAPACITOR	56pF,50V
C3105	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3106	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3107	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3108	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3109	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3112	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
C3113	NCB21AK-105X	CAPACITOR	1µF,10V
C3114	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3118	NCB31CK-104X	CAPACITOR	0.1µF,16V
C3120	NEA70GM-337X	E CAPACITOR	330µF,4.0V
C3501	NBE20JM-106X	T CAPACITOR	10µF,6.3V
C3502	NCF21CZ-105X	CAPACITOR	1µF,16V
C3503	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3504	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3505	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3506	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3507	NCF21CZ-105X	CAPACITOR	1µF,16V
C3508	NCB31EK-153X	CAPACITOR	0.015µF,25V
C3509	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3510	NCB31HK-332X	CAPACITOR	0.0033µF,50V
C3511	NDC31HJ-150X	CAPACITOR	15pF,50V
C3513	NCB31HK-332X	CAPACITOR	0.0033µF,50V
C3514	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3515	NCB31HK-332X	CAPACITOR	0.0033µF,50V
C3517	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3518	NCB31HK-332X	CAPACITOR	0.0033µF,50V
C3520	NCB31HK-332X	CAPACITOR	0.0033µF,50V
C3522	NCB31EK-103X	CAPACITOR	0.01µF,25V
C3523	NCB31HK-332X	CAPACITOR	0.0033µF,50V
C3524	NDC31HJ-150X	CAPACITOR	15pF,50V
C3525	NCB31CK-473X	CAPACITOR	0.047µF,16V
C3901	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4006	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4008	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4009	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4010	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4012	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4014	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4017	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4019	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4022	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4024	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4028	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4029	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4030	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4034	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4036	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4037	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4038	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4039	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4044	NBE20GM-336X	T CAPACITOR	33µF,4.0V
C4045	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4046	NCF21CZ-105X	CAPACITOR	1µF,16V
C4047	NCF31EZ-104X	CAPACITOR	0.1µF,25V
C4048	NBE20GM-336X	T CAPACITOR	33µF,4.0V
C4049	NDC31HJ-100X	CAPACITOR	10pF,50V
C4051	NDC31HJ-101X	CAPACITOR	100pF,50V
C4201	NEA71HM-225X	E CAPACITOR	2.2µF,50V
C4202	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4203	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4205	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4206	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4207	NCB31EK-103X	CAPACITOR	0.01µF,25V
C4208	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4209	NCF21CZ-105X	CAPACITOR	1µF,16V
C4210	NCF21CZ-105X	CAPACITOR	1µF,16V
C4251	NEA71HM-335X	E CAPACITOR	3.3µF,50V
C4252	NCB31CK-104X	CAPACITOR	0.1µF,16V
C4253	NCB31EK-153X	CAPACITOR	0.015µF,25V
C4254	NCB31EK-153X	CAPACITOR	0.015µF,25V
C4256	NEA71CM-106X	E CAPACITOR	10µF,16V
C4502	NEA71CM-106X	E CAPACITOR	10µF,16V
C4503	NEA70JM-107X	E CAPACITOR	100µF,6.3V
C4504	NCF31CZ-104X	CAPACITOR	0.1µF,16V
C4505	NDC31HJ-330X	CAPACITOR	33pF,50V
C4506	NCB31HK-102X	CAPACITOR	0.001µF,50V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C4507	NCB31HK-102X	CAPACITOR	0.001μF,50V
C4508	NCB31HK-102X	CAPACITOR	0.001μF,50V
C4509	NCB31HK-102X	CAPACITOR	0.001μF,50V
C4510	NCB31CK-104X	CAPACITOR	0.1μF,16V
C4511	NCF31CZ-104X	CAPACITOR	0.1μF,16V
C5203	NBE40GM-336X	T CAPACITOR	33μF,4.0V
C5204	NCF31EZ-104X	CAPACITOR	0.1μF,25V
C5207	NCB31CK-104X	CAPACITOR	0.1μF,16V
C5208	NCB31CK-104X	CAPACITOR	0.1μF,16V
C5209	NCB31CK-104X	CAPACITOR	0.1μF,16V
C5210	NCF31EZ-104X	CAPACITOR	0.1μF,25V
C5211	NCB21CK-105X	CAPACITOR	1μF,16V
C5212	NCB21CK-105X	CAPACITOR	1μF,16V
C5213	NCB31HK-332X	CAPACITOR	0.0033μF,50V
C5214	NCB21CK-105X	CAPACITOR	1μF,16V
C5216	NCF31EZ-104X	CAPACITOR	0.1μF,25V
C5218	NCF31EZ-104X	CAPACITOR	0.1μF,25V
C5219	NBP21CM-685X	T CAPACITOR	6.8μF,16V
C5220	NCF31EZ-104X	CAPACITOR	0.1μF,25V
C5221	NBP41VM-105X	T CAPACITOR	1μF,35V
C5222	NCB31HK-102X	CAPACITOR	0.001μF,50V
C5223	NCF31EZ-104X	CAPACITOR	0.1μF,25V
C5224	NBE40GM-336X	T CAPACITOR	33μF,4.0V
C5225	NCF31EZ-104X	CAPACITOR	0.1μF,25V
C5227	NCB31CK-104X	CAPACITOR	0.1μF,16V
C5228	NCF31EZ-104X	CAPACITOR	0.1μF,25V
C5229	NRS181J-0R0X	MG RESISTOR	0Ω,1/8W
C5230	NCB21EK-104X	CAPACITOR	0.1μF,25V
C5232	NDC31HJ-100X	CAPACITOR	10pF,50V
C5233	NDC31HJ-100X	CAPACITOR	10pF,50V
C5234	NDC31HJ-100X	CAPACITOR	10pF,50V
C5235	NDC31HJ-100X	CAPACITOR	10pF,50V
C5236	NDC31HJ-100X	CAPACITOR	10pF,50V
C5237	NDC31HJ-100X	CAPACITOR	10pF,50V
C6001	NCB21CK-105X	CAPACITOR	1μF,16V
C6003	NEA71CM-106X	E CAPACITOR	10μF,16V
C6004	NCB31CK-104X	CAPACITOR	0.1μF,16V
C6005	NCB31CK-104X	CAPACITOR	0.1μF,16V
C6006	NCB31CK-473X	CAPACITOR	0.047μF,16V
C6007	NCF21CZ-105X	CAPACITOR	1μF,16V
C6008	NCB21CK-105X	CAPACITOR	1μF,16V
C6009	NCB31EK-103X	CAPACITOR	0.01μF,25V
C6010	NCF21CZ-105X	CAPACITOR	1μF,16V
C6011	NCB31CK-104X	CAPACITOR	0.1μF,16V
C6012	NCB31HK-272X	CAPACITOR	0.0027μF,50V
C6013	NCB31CK-104X	CAPACITOR	0.1μF,16V
C6014	NCB31HK-561X	CAPACITOR	560pF,50V
C6015	NCB31HK-561X	CAPACITOR	560pF,50V
C6016	NCB31EK-103X	CAPACITOR	0.01μF,25V
C6017	NDC31HJ-101X	CAPACITOR	100pF,50V
C6018	NCB21CK-105X	CAPACITOR	1μF,16V
C6019	NCF21CZ-105X	CAPACITOR	1μF,16V
C6111	NCB21CK-105X	CAPACITOR	1μF,16V
C6113	NCB10JK-106X	CAPACITOR	10μF,6.3V
C6114	NCB31HK-102X	CAPACITOR	0.001μF,50V
C6121	NCB21CK-105X	CAPACITOR	1μF,16V
C6123	NCB10JK-106X	CAPACITOR	10μF,6.3V
C6124	NCB31HK-102X	CAPACITOR	0.001μF,50V
C6125	NEA71CM-106X	E CAPACITOR	10μF,16V
C6131	NCB21CK-105X	CAPACITOR	1μF,16V
C6132	NCB21CK-105X	CAPACITOR	1μF,16V

# ⚠ REF No.	PART No.	PART NAME, DESCRIPTION	
C6133	NCB21EK-683X	CAPACITOR	0.068μF,25V
C6141	NCB21CK-105X	CAPACITOR	1μF,16V
C6142	NCB21CK-105X	CAPACITOR	1μF,16V
C6143	NCB21CK-224X	CAPACITOR	0.22μF,16V
C6151	NCB21CK-105X	CAPACITOR	1μF,16V
C6153	NCB10JK-106X	CAPACITOR	10μF,6.3V
C6154	NCB31HK-472X	CAPACITOR	0.0047μF,50V
C6155	NCB21CK-105X	CAPACITOR	1μF,16V
C6161	NCB21CK-105X	CAPACITOR	1μF,16V
C6162	NCB11EK-105X	CAPACITOR	1μF,25V
C6163	NCB31HK-102X	CAPACITOR	0.001μF,50V
C6164	NCB31EK-103X	CAPACITOR	0.01μF,25V
C6165	NCB21CK-105X	CAPACITOR	1μF,16V
C6167	NCB21CK-105X	CAPACITOR	1μF,16V
C6168	NCB11EK-105X	CAPACITOR	1μF,25V
C6169	NCB21CK-105X	CAPACITOR	1μF,16V
C6171	NCB21CK-105X	CAPACITOR	1μF,16V
C6173	NCB21CK-105X	CAPACITOR	1μF,16V
C6174	NCB21CK-105X	CAPACITOR	1μF,16V
C6175	NCB21CK-105X	CAPACITOR	1μF,16V
C7809	NBE41AM-106X	T CAPACITOR	10μF,10V
C7810	NDC31HJ-100X	CAPACITOR	10pF,50V
C7811	NDC31HJ-100X	CAPACITOR	10pF,50V
C7812	NDC31HJ-100X	CAPACITOR	10pF,50V
L101	NQL034K-330X	COIL	33μH
L102	NQR0199-004X	FERRITE BEAD	
L103	NQR0199-004X	FERRITE BEAD	
L501	NQR0129-002X	FERRITE BEAD	
L2001	NQL144K-101X	COIL	100μH
L2002	NQL144K-101X	COIL	100μH
L2003	NQL144K-470X	COIL	47μH
L2051	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
L2052	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
L2401	NQL144K-470X	COIL	47μH
L3002	NQL315K-220X	COIL	22μH
L3003	NQL315K-220X	COIL	22μH
L3101	NQL315K-220X	COIL	22μH
L3501	NQL315K-220X	COIL	22μH
L3502	NQL315K-220X	COIL	22μH
L3901	NQL085J-1R5X	COIL	1μH
L4001	NRS181J-0R0X	MG RESISTOR	0Ω,1/8W
L4002	NRS181J-0R0X	MG RESISTOR	0Ω,1/8W
L4003	NQL314K-220X	COIL	22μH
L4201	NQL315K-220X	COIL	22μH
L4501	NQL315K-100X	COIL	10μH
L4502	NQL034K-220X	COIL	22μH
L4503	NQL315K-220X	COIL	22μH
L5201	NQL314K-220X	COIL	22μH
L5202	NQL314K-101X	COIL	100μH
L5203	NQL314K-101X	COIL	100μH
L5204	NQL314K-220X	COIL	22μH
L6001	NQLZ011-4R7X	COIL	4.7μH
L6002	NQLZ011-4R7X	COIL	4.7μH
L6111	NQLZ011-390X	COIL	39μH
L6121	NQLZ011-390X	COIL	39μH
L6131	NQLZ011-470X	COIL	47μH
L6141	NQLZ011-470X	COIL	47μH
L6151	NQLZ011-470X	COIL	47μH
L6161	NQLZ011-221X	COIL	220μH
L7801	NQL144K-100X	COIL	10μH
X101	NAX0251-001X	CRYSTAL RESONATOR	

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	X102	NAX0325-001X	CRYSTAL RESONATOR	
	X3001	QAX0565-001	CRYSTAL RESONATOR	
	WR1	WJV0019-001B	E-PRIMARY WIRE	
	J502	YQ32092-3	BATT TERM UNIT	
	J503	PEMC1203	MINI JACK	
	J504	LY31356-002A	JACK UNIT	
	CN1	QGF0507F1-10X	FPC CONNECTOR	
	CN2	QGF0510F2-14X	FPC CONNECTOR	
	CN3	QGF0507F1-18X	FPC CONNECTOR	
	CN4	QGA1201F2-02X	CONNECTOR	
	CN5	QGF0507F1-11X	FPC CONNECTOR	
	CN7	QGF0507F2-11X	FPC CONNECTOR	
	CN8	QGA1201C2-02X	CONNECTOR	
	CN12	QGA1201F2-05X	CONNECTOR	
	CN13	QGF0507F1-10X	FPC CONNECTOR	
	CN15	QGF0512C1-22X	FPC CONNECTOR	
	CN16	QGF0303F1-27W	FFC/FPC CONNECTOR	
	CN18	QGF0510F2-14X	FPC CONNECTOR	
	CN22	QGF0505F2-14X	FPC CONNECTOR	
	CN25	QGB0801M1-20X	CONNECTOR	
	CN26	QGA1201C2-02X	CONNECTOR	
	CN27	QGA1201F2-02X	CONNECTOR	
⚠	F6001	NMFZ006-2R0X-K	FUSE	T2.0A
⚠	F6003	NMFZ006-R50X-K	FUSE	T0.5A
	SD1	LY41185-001B	SHIELD CASE(L)	
	SD2	LY41713-001A	SHIELD PLATE	
	SD3	LY41473-001A	SHIELD PLATE	

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CCD BOARD ASSEMBLY <02>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YB20846L-01	CCD BOARD ASSY	
	Q5301	2SC3931/CD/-X	TRANSISTOR	
	R5302	NRSA02J-562X	MG RESISTOR	5.6kΩ,1/10W
	R5303	NRSA02J-0R0X	MG RESISTOR	0Ω,1/10W
	C5301	NCF21EZ-104X	CAPACITOR	0.1µF,25V
	C5302	NBP21EM-155X	T CAPACITOR	1.5µF,25V
	C5304	NCF21EZ-104X	CAPACITOR	0.1µF,25V
	C5305	NDC21HJ-270X	CAPACITOR	27pF,50V

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MONITOR BOARD ASSEMBLY <07>

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	YB20868A	MONITOR BOARD ASSY	
	IC7601	AN2545FHQ	IC	
	IC7602	AT25040N-10SC-X	IC	
	IC7603	BA15532F	IC	
	Q7501	2SC3647/ST/-X	POW TRANSISTOR	
	Q7502	2SC3647/ST/-X	POW TRANSISTOR	
	Q7503	DTA144EE	TRANSISTOR	
	Q7504	2SC4617/QR/-X	TRANSISTOR	
	Q7505	2SC4617/QR/-X	TRANSISTOR	
	Q7506	2SC4617/QR/-X	TRANSISTOR	
	Q7608	2SC4617/QR/-X	TRANSISTOR	
	Q7609	2SA1774/QR/-X	TRANSISTOR	
	D7601	RB471E	SB DIODE	
	R7501	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R7502	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R7503	NRSA63J-102X	MG RESISTOR	1kΩ,1/16W
	R7504	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
	R7505	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
	R7506	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
	R7507	NRSA63J-473X	MG RESISTOR	47kΩ,1/16W
	R7508	NRSA63J-223X	MG RESISTOR	22kΩ,1/16W
	R7509	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R7510	NRSA63J-563X	MG RESISTOR	56kΩ,1/16W
	R7601	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
	R7602	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
	R7603	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
	R7604	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
	R7605	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
	R7606	NRSA63J-100X	MG RESISTOR	10Ω,1/16W
	R7607	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R7608	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
	R7610	NRSA63J-561X	MG RESISTOR	560Ω,1/16W
	R7623	NRSA63J-101X	MG RESISTOR	100Ω,1/16W
	R7631	NRSA63J-243X	MG RESISTOR	24kΩ,1/16W
	R7632	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R7633	NRSA63J-393X	MG RESISTOR	39kΩ,1/16W
	R7634	NRSA63J-822X	MG RESISTOR	8.2kΩ,1/16W
	R7635	NRVA63D-223X	CMF RESISTOR	22kΩ,1/16W
	R7636	NRVA63D-392X	CMF RESISTOR	3.9kΩ,1/16W
	R7637	NRVA63D-333X	CMF RESISTOR	33kΩ,1/16W
	R7638	NRSA63J-153X	MG RESISTOR	15kΩ,1/16W
	R7639	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R7640	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R7641	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R7644	NRSA63J-683X	MG RESISTOR	68kΩ,1/16W
	R7646	NRSA63J-103X	MG RESISTOR	10kΩ,1/16W
	R7647	NRSA63J-222X	MG RESISTOR	2.2kΩ,1/16W
	R7655	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	R7657	NRSA63J-0R0X	MG RESISTOR	0Ω,1/16W
	C7501	NCZ1021-270X	CAPACITOR	27pF,2KV
	C7502	NCZ1021-270X	CAPACITOR	27pF,2KV
	C7503	NFV41HJ-333X	MPPS CAPACITOR	0.033µF,50V
	C7504	NCB31EK-103X	CAPACITOR	0.01µF,25V
	C7505	NBE40JM-226X	T CAPACITOR	22µF,6.3V
	C7506	NCB31EK-103X	CAPACITOR	0.01µF,25V
	C7507	NDC31HJ-151X	CAPACITOR	150pF,50V
	C7508	NCB11CK-105X	CAPACITOR	1µF,16V
	C7509	NCB31CK-104X	CAPACITOR	0.1µF,16V
	C7510	NCB31HK-562X	CAPACITOR	0.0056µF,50V
	C7601	NCB31CK-104X	CAPACITOR	0.1µF,16V
	C7602	NCB31CK-104X	CAPACITOR	0.1µF,16V
	C7603	NBE20JM-106X	T CAPACITOR	10µF,6.3V
	C7604	NBE21AM-475X	T CAPACITOR	4.7µF,10V
	C7605	NCB11CK-225X	CAPACITOR	2.2µF,16V
	C7606	NCB31CK-104X	CAPACITOR	0.1µF,16V
	C7607	NCB11CK-225X	CAPACITOR	2.2µF,16V
	C7608	NCB11CK-225X	CAPACITOR	2.2µF,16V
	C7609	NCB31HK-103X	CAPACITOR	0.01µF,50V
	C7610	NBE41AM-106X	T CAPACITOR	10µF,10V
	C7611	NCB31HK-103X	CAPACITOR	0.01µF,50V
	C7612	NBE20JM-106X	T CAPACITOR	10µF,6.3V

# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	C7613	NBE20JM-225X	T CAPACITOR	2.2µF,6.3V
	C7614	NCB31HK-152X	CAPACITOR	0.0015µF,50V
	C7615	NCB31HK-103X	CAPACITOR	0.01µF,50V
	C7616	NBE20JM-106X	T CAPACITOR	10µF,6.3V
	C7617	NBE40JM-226X	T CAPACITOR	22µF,6.3V
	C7618	NCB31HK-103X	CAPACITOR	0.01µF,50V
	C7619	NCB31HK-681X	CAPACITOR	680pF,50V
	C7620	NBE20JM-475X	T CAPACITOR	4.7µF,6.3V
	C7621	NCB30JK-105X	CAPACITOR	1µF,6.3V
	C7626	NCB31HK-102X	CAPACITOR	0.001µF,50V
	C7631	NCB31HK-102X	CAPACITOR	0.001µF,50V
	C7632	NCF31CZ-104X	CAPACITOR	0.1µF,16V
	C7641	NDC31HJ-330X	CAPACITOR	33pF,50V
	C7642	NCB31CK-104X	CAPACITOR	0.1µF,16V
	C7643	NCF31CZ-104X	CAPACITOR	0.1µF,16V
	C7644	NCB31CK-104X	CAPACITOR	0.1µF,16V
	C7645	NBP41EM-475X	T CAPACITOR	4.7µF,25V
	C7646	NCB31HK-103X	CAPACITOR	0.01µF,50V
	C7647	NBP41EM-475X	T CAPACITOR	4.7µF,25V
	C7648	NBP21CM-225X	T CAPACITOR	2.2µF,16V
	C7649	NBE21AM-106X	T CAPACITOR	10µF,10V
	C7651	NCB31HK-103X	CAPACITOR	0.01µF,50V
	C7652	NBP41EM-475X	T CAPACITOR	4.7µF,25V
	C7653	NBE20JM-106X	T CAPACITOR	10µF,6.3V
	C7654	NCB31HK-103X	CAPACITOR	0.01µF,50V
	C7655	NBP41EM-475X	T CAPACITOR	4.7µF,25V
	C7656	NCB31HK-103X	CAPACITOR	0.01µF,50V
	C7657	NBE20JM-106X	T CAPACITOR	10µF,6.3V
	C7658	NCB31HK-103X	CAPACITOR	0.01µF,50V
	L7501	NQLZ010-680X	COIL	68µH
	L7502	NQLZ010-220X	COIL	22µH
	L7601	NQL144K-220X	COIL	22µH
	L7602	NQL144K-220X	COIL	22µH
	L7603	NQL144K-220X	COIL	22µH
	L7607	NQL144K-220X	COIL	22µH
	L7610	NQL144K-220X	COIL	22µH
	L7611	NQL144K-220X	COIL	22µH
	L7612	NQL144K-220X	COIL	22µH
	L7614	NQL144K-220X	COIL	22µH
⚠	T7501	NQS0030-001	SW TRANSF	
	CN7501	QGF0505F2-24X	FPC CONNECTOR	
	CN7502	QGF0501F1-24X	FPC CONNECTOR	
	CN7503	QGA5002F1-02X	CONNECTOR	
	OT1	LY41084-001B	EARTH PLATE	

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E.VF BOARD ASSEMBLY <60>

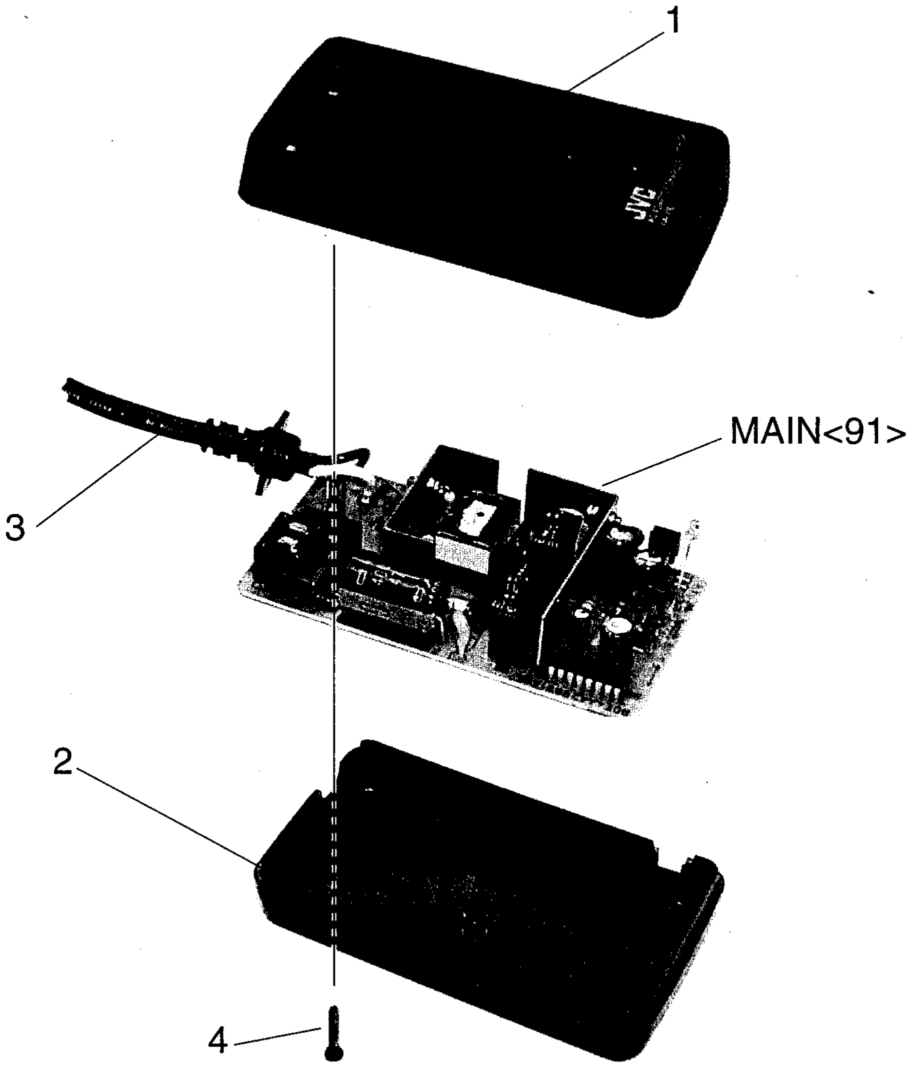
# ⚠	REF No.	PART No.	PART NAME, DESCRIPTION	
	PW	LY41289-002A	E.VF BOARD ASSY	
	IC7001	BA7149F-XE	IC	
	Q7001	2SD968A(RS)	PH TRANSISTOR	
	Q7002	2SA1748(QR)	PH TRANSISTOR	
	Q7003	2SA1748(QR)	PH TRANSISTOR	
	D7001	MA142WA	SI DIODE	
	R7002	NRSA02J-3R9X	MG RESISTOR	3.9Ω,1/10W
	R7003	NRVA02D-153X	CMF RESISTOR	15kΩ,1/10W
	R7005	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R7006	NRSA02J-113X	MG RESISTOR	11kΩ,1/10W
	R7007	NRSA02J-330X	MG RESISTOR	33Ω,1/10W
	R7008	NRSA02J-394X	MG RESISTOR	390kΩ,1/10W
	R7009	NRSA02J-103X	MG RESISTOR	10kΩ,1/10W
	R7010	NRVA02D-104X	CMF RESISTOR	100kΩ,1/10W
	R7011	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
	R7012	NRSA02J-221X	MG RESISTOR	220Ω,1/10W
	R7013	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R7014	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
	R7015	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
	R7016	NRSA02J-122X	MG RESISTOR	1.2kΩ,1/10W
	R7017	NRSA02J-472X	MG RESISTOR	4.7kΩ,1/10W
	R7018	NRSA02J-223X	MG RESISTOR	22kΩ,1/10W
	R7019	NRSA02J-120X	MG RESISTOR	12Ω,1/10W
	R7020	NRS181J-685X	MG RESISTOR	6.8MΩ,1/8W
	R7021	NRSA02J-475X	MG RESISTOR	4.7MΩ,1/10W
	R7022	NRSA02J-475X	MG RESISTOR	4.7MΩ,1/10W
	R7023	NRSA02J-564X	MG RESISTOR	560kΩ,1/10W
	R7024	NRSA02J-105X	MG RESISTOR	1MΩ,1/10W
	R7025	NRSA02J-275X	MG RESISTOR	2.7MΩ,1/10W
	R7026	NRSA02J-275X	MG RESISTOR	2.7MΩ,1/10W
	R7029	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	R7030	NRSA02J-102X	MG RESISTOR	1kΩ,1/10W
	VR7001	NVP0001-221X	TRIM RESISTOR,V.SIZE	
	VR7002	NVP0001-225X	TRIM RESISTOR,BRIGHT	
	VR7003	PERE0595-565	V RESISTOR,FOCUS	
	C7001	QFV11HJ-104A	F CAPACITOR	0.1µF,50V
	C7002	QEDP1AM-227	E CAPACITOR	220µF,10V
	C7003	QEDP1AM-227	E CAPACITOR	220µF,10V
	C7004	QEDP1AM-227	E CAPACITOR	220µF,10V
	C7005	NCF21CZ-105X	CAPACITOR	1µF,16V
	C7006	NCB21HK-152X	CAPACITOR	0.0015µF,50V
	C7007	NCB11CK-105X	CAPACITOR	1µF,16V
	C7008	NCF21CZ-105X	CAPACITOR	1µF,16V
	C7009	PECA1131-A107	E CAPACITOR	100µF,10V
	C7010	PECA1135-Y	CAPACITOR	5600pF,100V
	C7011	NDC21HJ-180X	CAPACITOR	18pF,50V
	C7012	QEKC1HM-105Z	E CAPACITOR	1µF,50V
	C7013	NCF21HZ-104X	CAPACITOR	0.1µF,50V
	C7014	NCF21HZ-104X	CAPACITOR	0.1µF,50V
	C7015	QCZ0212-151	CAPACITOR	150pF,1kV
	C7016	PECA1006	CAPACITOR	330pF,500V
	L7001	QQR0970-001	LINEARITY COIL	
	L7002	PU49994-220	COIL	22µH
	L7003	PELN1101-680JY	COIL	68µH
⚠	T7001	QQH0011-002	FB TRANSF	
	CN7001	PEMC0856-4	CONNECTOR	
	CN7002	QGA1501C1-05	CONNECTOR,with WIRE	
	CN7003	WJK0025-001A	E-SIC WIRE C-B	

SECTION 6
AC POWER ADAPTER (AA-V16U)

SAFETY PRECAUTION

Parts identified by the ⚠ symbol are critical for safety. Replace only with specified part numbers.

6.1 CABINET ASSEMBLY <MA>



#⚠REF No.	PART No.	PART NAME, DESCRIPTION
************	**************	**********************************

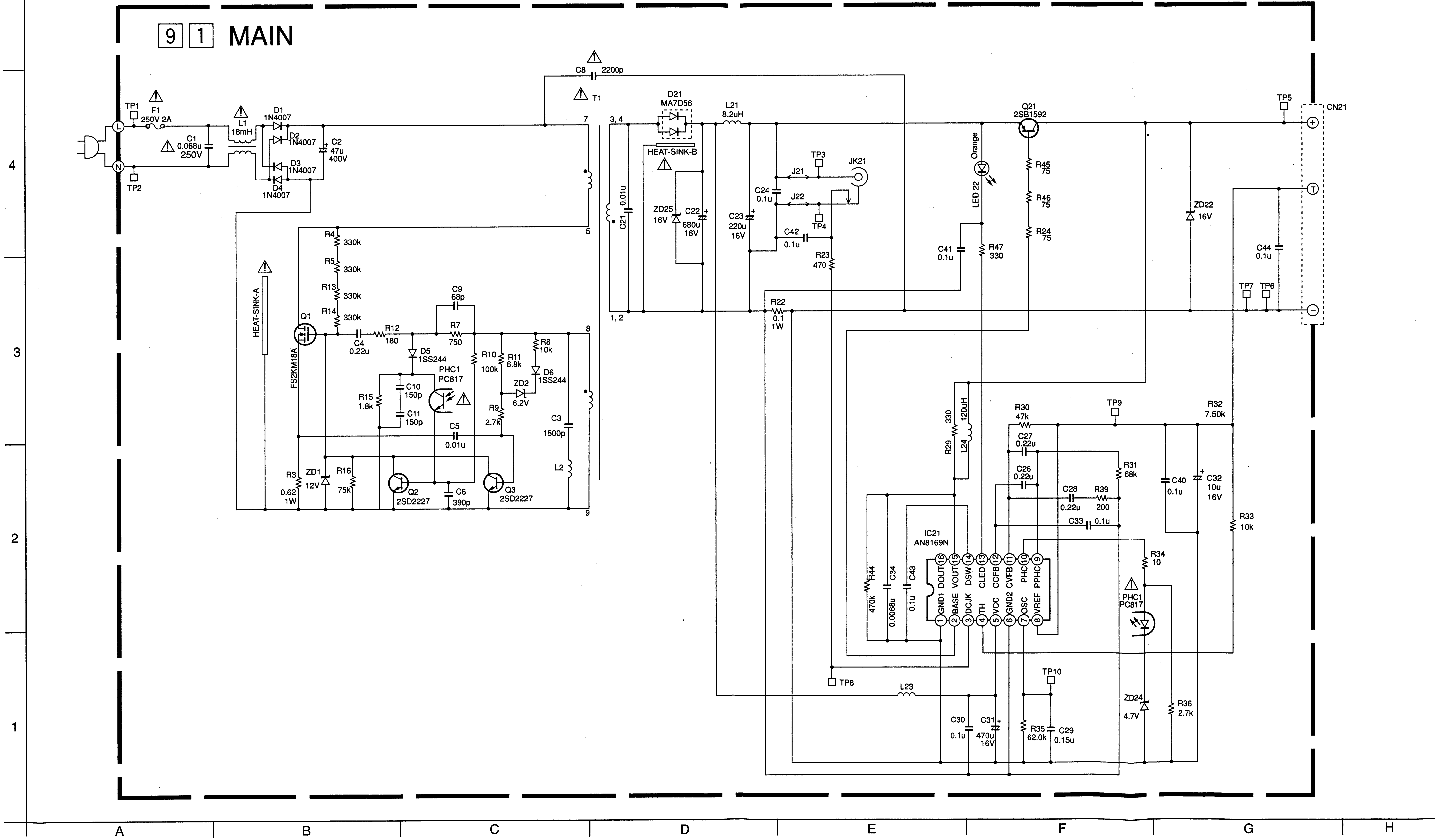
CABINET ASSEMBLY <MA>

⚠ 1	PTY20538-011	UPPER CASE ASSY
⚠ 2	PTY20538-021	LOWER CASE
⚠ 3	PTY20290-040	POWER CORD
4	YQ10531-011	SCREW

6.2 SCHEMATIC DIAGRAM

NOTE: *When ordering parts, be sure to order according to the Part Number indicated in the Parts List.*

Safety precautions
The components identified by the symbol ⚠ are critical for safety. For continued safety, replace safety critical components only with manufacturer's recommended parts.



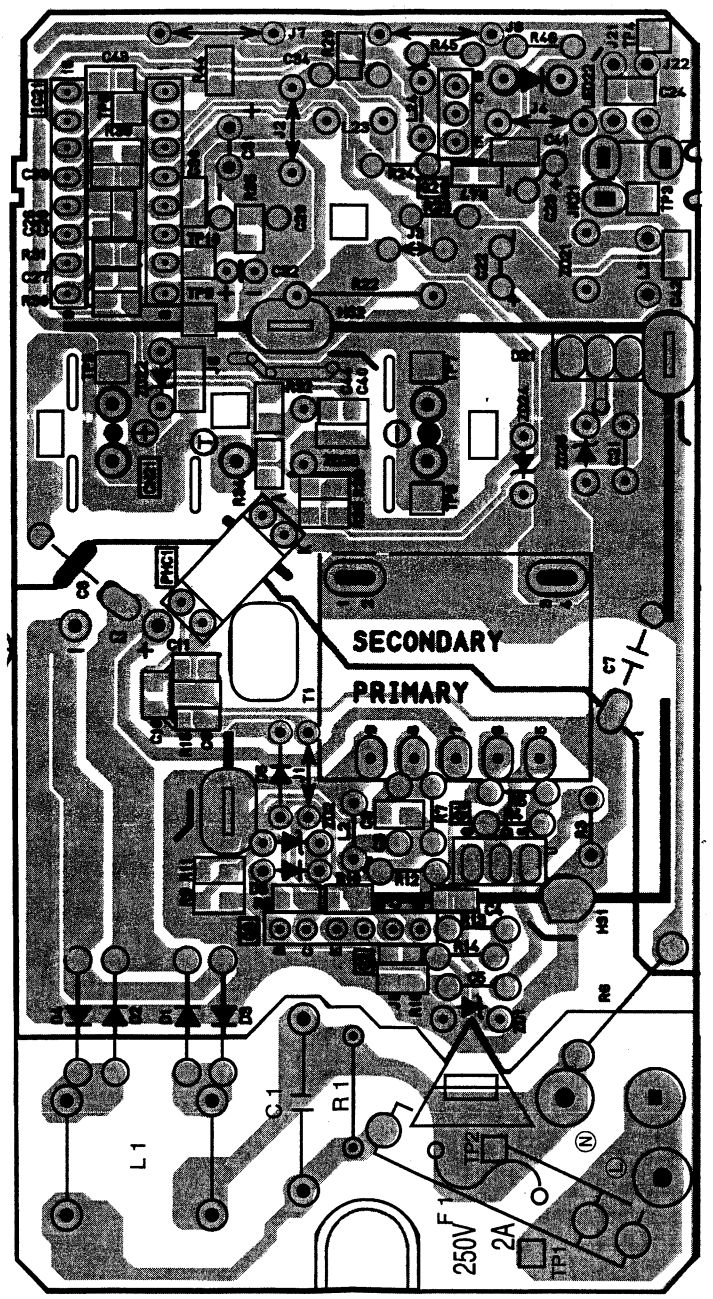
5
4
3
2
1
A
B
C
D
E
F
G
H
9 1 MAIN
TP1
F1
250V 2A
TP2
C1
0.068u
250V
L1
18mH
D1
1N4007
D2
1N4007
D3
1N4007
D4
1N4007
C2
47u
400V
C8
2200p
T1
7
5
8
9
3, 4
1, 2
C21
0.01u
D21
MA7D56
HEAT-SINK-B
ZD25
16V
C22
680u
16V
L21
8.2uH
C23
220u
16V
C24
0.1u
J21
J22
TP3
TP4
JK21
C42
0.1u
R23
470
R22
0.1
1W
HEAT-SINK-A
Q1
FS2KM18A
R4
330k
R5
330k
R13
330k
R14
330k
C4
0.22u
R12
180
C9
68p
R7
750
D5
1SS244
PHC1
PC817
C10
150p
C11
150p
R15
1.8k
C5
0.01u
R10
100k
R11
6.8k
R8
10k
D6
1SS244
ZD2
6.2V
R9
2.7k
C3
1500p
L2
R3
0.62
1W
ZD1
12V
R16
75k
Q2
2SD2227
C6
390p
Q3
2SD2227
Orange
LED 22
C41
0.1u
R47
330
Q21
2SB1592
R45
75
R46
75
R24
75
ZD22
16V
TP5
CN21
C44
0.1u
TP7
TP6
R29
330
L24
120uH
R30
47k
C27
0.22u
C26
0.22u
TP9
R31
68k
C28
0.22u
R39
200
C33
0.1u
C40
0.1u
C32
10u
16V
R32
7.50k
R33
10k
IC21
AN8169N
1 GND1
2 BASE
3 DCJK
4 TH
5 VCC
6 GND2
7 OSC
8 VREF
16 DOUT
15 VOUT
14 DSW
13 CLED
12 CCFB
11 CVFB
10 PHC
9 PPHC
R44
470k
C34
0.0068u
C43
0.1u
R34
10
PHC1
PC817
TP8
L23
TP10
C30
0.1u
C31
470u
16V
R35
62.0k
C29
0.15u
ZD24
4.7V
R36
2.7k

6.3 CIRCUIT BOARD

2A 250V

CAUTION:
FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH SAME TYPE AND RATED FUSE.

ATTENTION:
POUR UNE PROTECTION PERMANENTE CONTRE LES RISQUE D'INCENDE, REMPLACER LE FUSIBLE PAR UN AUTRE DE MEME TYPE ET DE MEME TENSION.



6.4 ELECTRICAL PARTS LIST

✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻✻

MAIN BOARD ASSEMBLY <91>

#⚠REF No.	PART No.	PART NAME, DESCRIPTION	
⚠ PW1	PTY20538-501	MAIN BOARD ASSY	
IC21	AN8169N	IC	
Q1	FS2KM18A	MOS FET	
Q2	2SD2227	TRANSISTER	
Q3	2SD2227	TRANSISTER	
Q21	2SB1592	TRANSISTER	
D1	1N4007	DIODE	1000V 1A
D2	1N4007	DIODE	1000V 1A
D3	1N4007	DIODE	1000V 1A
D4	1N4007	DIODE	1000V 1A
D5	1SS244T77	DIODE	200V 6A
D6	1SS244T77	DIODE	200V 6A
D21	MA7D56	DIODE	60V 10A
ZD1	MTZJ12C-T2	ZENER DIODE	12V 500mW
ZD2	MTZJ6.2B-T2	ZENER DIODE	6.2V 500mW
ZD22	MTZJ16T-77	ZENER DIODE	16V 500mW
ZD24	MA4047NM	ZENER DIODE	4.7V 500mW
ZD25	MTZJ16T-77	ZENER DIODE	16V 500mW
LED22	YQ10531-541	LED,ORANGE CHARGE	
R3	PTY10067-601	MF RESISTOR	0.62Ω 1W
R4	QRE141J-334Y	RESISTOR	330kΩ 1/4W
R5	QRE141J-334Y	RESISTOR	330kΩ 1/4W
R7	QRE141J-751Y	RESISTOR	750Ω 1/4W
R8	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W
R9	NRSA02J-272X	MG RESISTOR	2.7kΩ 1/10W
R10	NRSA02J-104X	MG RESISTOR	100kΩ 1/10W
R11	NRSA02J-682X	MG RESISTOR	6.8kΩ 1/10W
R12	QRE141J-181Y	RESISTOR	180Ω 1/4W
R13	QRE141J-334Y	RESISTOR	330kΩ 1/4W
R14	QRE141J-334Y	RESISTOR	330kΩ 1/4W
R15	NRSA02J-182X	MG RESISTOR	1.8kΩ 1/10W
R16	NRSA02J-753X	MG RESISTOR	75kΩ 1/10W
R22	QRZ0192-R10X	MF RESISTOR	0.1Ω 1W
R23	QRE141J-471Y	RESISTOR	470Ω 1/4W
R24	QRE141J-750Y	RESISTOR	75Ω 1/4W
R29	NRSA02J-331X	MG RESISTOR	330Ω 1/10W
R30	NRSA02J-473X	MG RESISTOR	47kΩ 1/10W
R31	NRSA02J-683X	MG RESISTOR	68kΩ 1/10W
R32	PTY10067-614	MG RESISTOR	7.50kΩ 1/10W
R33	NRSA02J-103X	MG RESISTOR	10kΩ 1/10W
R34	NRSA02J-100X	MG RESISTOR	10Ω 1/10W
R35	PTY20538-601	MG RESISTOR	62.0kΩ 1/10W
R36	NRSA02J-272X	MG RESISTOR	2.7kΩ 1/10W
R39	NRSA02J-201X	MG RESISTOR	200Ω 1/10W
R44	NRSA02J-474X	MG RESISTOR	470kΩ 1/10W
R45	QRE141J-750Y	RESISTOR	75Ω 1/4W
R46	QRE141J-750Y	RESISTOR	75Ω 1/4W
R47	NRSA02J-331X	MG RESISTOR	330Ω 1/10W
⚠ C1	QFZ9051-683	F CAPACITOR	0.068µF 250V
C2	YQ10626-402	E CAPACITOR	47µF 400V
C3	PTY10067-651	CAPACITOR	1500pF 250V
C4	NCB21CK-224X	CAPACITOR	0.22µF 16V
C5	QFLC1HJ-103Z	F CAPACITOR	0.01µF 50V
C6	NCB21HK-391X	CAPACITOR	390pF 50V
⚠ C8	QCZ9073-222	CAPACITOR	2200pF 250V
C9	NDC21HJ-680X	CAPACITOR	68pF 50V
C10	NDC21HJ-151X	CAPACITOR	150pF 50V
C11	NDC21HJ-151X	CAPACITOR	150pF 50V
C21	PTY10067-657	CAPACITOR	0.01µF 250V
C22	PTY20292-321	E CAPACITOR	680µF 16V
C23	QETL1CM-227	E CAPACITOR	220µF 16V
C24	PTY10067-511	CAPACITOR	0.1µF 25V
C26	NCB21CK-224X	CAPACITOR	0.22µF 16V
C27	NCB21CK-224X	CAPACITOR	0.22µF 16V
C28	NCB21CK-224X	CAPACITOR	0.22µF 16V
C29	QFLA1HJ-154	F CAPACITOR	0.15µF 50V
C30	NCB21EK-104X	CAPACITOR	0.1µF 25V
C31	QETL1CM-477	E CAPACITOR	470µF 16V
C32	QETA1CM-106	E CAPACITOR	10µF 16V
C33	NCB21EK-104X	CAPACITOR	0.1µF 25V
C34	PTY10067-662	CAPACITOR	0.0068µF 50V
C40	NCB21EK-104X	CAPACITOR	0.1µF 25V
C41	NCF21HZ-104X	CAPACITOR	0.1µF 50V
C42	NCF21HZ-104X	CAPACITOR	0.1µF 50V
C43	NCF21HZ-104X	CAPACITOR	0.1µF 50V
C44	NCF21HZ-104X	CAPACITOR	0.1µF 50V
⚠ L1	PTY10067-701	LINE FILTER	
L2	PTY10067-702	BEAD INDUCTOR	
L21	PTY10067-703	COIL	
L23	PTY20538-811	BEAD INDUCTOR	
L24	PTY10067-707	BEAD INDUCTOR	
⚠ PHC1	PC817A	PHOTO COUPLER	
⚠	or PC817X1	PHOTO COUPLER	
⚠ T1	PTY20538-801	SW TRANS	
⚠ F1	PTY10067-101	FUSE	2A 250V
JK21	YQ21032-301	DC JACK	
⚠ HS1	PTY20538-071	HEAT SINK A	
⚠ HS2	PTY20598-072	HEAT SINK B	
OT1	PTY10067-551	SCREW,X2	
TB1	PTY20538-052	TERMINAL 1, X2	
TB2	PTY20538-053	TERMINAL 2, X3	
HD1	PTY10067-571	TERMINAL HOLDER	